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"SURGICAL SHOCK IS NOW PREVENTABLE With CORTATE Routine"

PREVENTION of surgical shock with pre-operative CORTATE ROUTINE has been demonstrated by Perla and his colleagues. This vital development was forecast physiologically and experimentally by Swingle and associates, Zwemer, Sweet, Rowntree, Lucas, Wyman, Harrop and Weinstein, and Loeb and Atchley. CORTATE ROUTINE in pre-operative preparation represents a surgical advance of the first magnitude.

Even in debilitated patients undergoing most extensive surgical procedures pre-operative CORTATE preparation resulted in . . . "no signs of shock . . . blood pressure maintained or elevated . . . excellent course." With CORTATE ROUTINE in post-operative care . . . "post-operative exhaustion and toxemia were definitely lessened, complications did not occur and operative recovery appeared, to the surgeons concerned, to be more rapid than in their preceding surgical experience".[1]

CORTATE ROUTINE is now a vital and indispensable part of therapy for the prevention of shock and for the asthenias following exhausting states or diseases.

[1] Perla, D.; Freiman, D. G.; Sandberg, M., and Greenberg, S. S.: Proc. Soc. Exper. Biol. & Med. 43:397 (Feb.) 1940.

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Editorials

CONTRIBUTIONS OF MEXICO TO SURGERY

SURGERY in the pre-Cortés period of Mexican life was essentially unimportant. In a society which was only moderately well organized, its culture being determined by the people who inhabited the region, and in a country where the copper age had not become definitely established, surgery proper could not exist; it was, at its best, practiced according to rudimentary, empirical methods, tinged with witchcraft and occasionally blotted with the blood of human sacrifices. Therefore, the oft repeated opinion of Fray Toribio de Benavente (Motolinía) regarding the skill of the Aztec *tetetzeles* lacks scientific foundation.

Leaving aside the pre-Cortés period of a nationally nonexistent Mexico, it naturally follows that we must begin this chronologic account with the completion of the Conquest (1521), a historical feat which registered the birth of a national individuality; this primary historic action was followed by the colonial period and the sorrowful process of the development of independent Mexico.

It was in reality after the Conquest was completed and Hernán Cortés, the Great Captain, began the national integration of Mexico, that Mexican surgery had its origin. In the subsequent colonial development, the viceregal city, capital of the Mexico of today, attained the privilege of being

Y RECOPILACION
DE CHIRVGIA, CON VN
Arte para ſugrar muy vtil y prouechoſa.
COMPVESTA POR MAE.S-
tre Alonſo Lopez, natural de las Inojoſas.
Chirujano y enfermero del Oſpital de
S. Joſeph de los Yndios, deſta muy
inſigne Ciudad de Mexico.
DIRIGIDO AL ILL.mo y R.
S. Don P. Moya de Contreras, Arçobiſpo
de Mexico y del cõcejo de ſu Mageſt.
EN MEXICO,
Por Antonio Ricarco. 1578.

Cover page of the first book of Surgery printed in America, *Suma Y Recopilacion De Chirurgia*, by Maestre Alonso López de Hinojosa, printed in Mexico City in 1578 by Antonio Ricarco. Contains 201 pages.

the metropolis of a state extending from Honduras to what is today the Dominion of Canada.

The first licensed surgeons who practiced in the City of Mexico were Maestre Diego Pedraza and Juan de Amézquita, both Spaniards; the latter arrived in New Spain with the expedition of Pánfilo de Narváez in 1520.

In 1524, the Conquistador founded the *Hospital de la Purísima Concepción y Jesús Nazareno* at the famous site known as Huitzillan, where he and the Aztec Emperor Moctezuma held their first meeting; the *Hospital de Jesús*, as it is named at the present time, is the oldest institution in all the Americas built for the purpose of assisting the needy.

In 1535, Don Diego de Mendoza, the first viceroy, brought to Mexico the first printing press that was operated in the New World, under the direction of Juan Pablos (the Italian Giovanni Paoli), and under the benevolent patronage of Fray Juan de Zumárraga, Archbishop of Mexico.

The first book on surgery printed in all the Americas was *Suma y Recopilacion de Chirurgia*, by Dr. Alonso López de Hinojosa; this was printed in the City of Mexico in the year 1578 by Antonio Ricarco. The following year, the second book published in America was also printed in Mexico City by Antonio Ricarco, under the title, *Tratado Breve de Chirurgia y de Algunas Enfermedades*, by Dr. García de Farfán, Fray Agustín de Farfán, an Austin friar.

Fray Bernardino de Sahagún and the first viceroy of New Spain, Don Antonio de Mendoza, founded the College of Santa Cruz de Tlaltelolco, inaugurated on January 6, 1536; the curriculum of this college included for the first time in America a course in medicine, and it seems that surgery was also taught for several years. From the Sahagún's college were graduated the first native surgeons, properly speaking, who added to their surgical practice the use of autochthonous medicinal herbs, the great variety of which played an important rôle in materia medica.

According to Dr. Francisco Fernández del Castillo, the first recorded cystotomy was performed in Mexico; he failed to find an older urological operation of this kind reported other than the one executed in Mexico City the middle part of the sixteenth century by Dr. Cristóbal Méndez, which was described by him in his book, *Del Ejercicio y Su Provecho*, published in Jaén, Spain, in 1553.

On September 21, 1551, Emperor Charles V issued a Royal Decree ordering the foundation of the Royal and Pontifical University of Mexico, having the same statutes, privileges and exemptions as the celebrated University of Salamanca; it was inaugurated on January 25, 1553. This and the University of Lima, Perú, were the first institutions of their kind on the American Continent. On November 7, 1582, a specialized course in medicine was created at the University of Mexico, with Dr. Juan de la Fuente in charge. In 1621 a course in surgery and anatomy was initiated, at the request of Dr. Rodrigo Muñoz, in accordance with the royal edict of Philip III. In the seventeenth century the Mexican *protomedicatus* was similar in organization and function to that of Castille, and Spain was the vanguard amongst all other countries in the science of medicine.

In 1576, Drs. de la Fuente, López de Hinojosa and Hernández gave great impetus to anatomic research on the cadaver, as a result of their work in dissection done at the Hospital Real.

The Royal College of Surgeons was founded in New Spain in 1786, in compliance with the royal decree issued by Charles III; it was inaugurated in the City of Mexico on April 10, 1770, having the Hospital Real at its disposal for teaching purposes. The New Spain Royal College of Surgeons was the first in America and the third in the Spanish

Kingdom; in Spain the first institution of learning of this type was the one founded in Cádiz (between 1747 and 1748); the second was founded in Barcelona (1760).

Charles III enacted the writing of the statutes and by-laws for the New Spain Royal College of Surgeons, which were printed successively in Madrid (1791), Barcelona (1799) and Mexico City (1799). A leather-bound copy of this document is preserved in the library of the present University of Mexico School of Medicine.

In view of the fact that the most outstanding professors who founded the *Establecimiento de Ciencias Médicas* (1833), its dean included, were all alumni of the Royal College of Surgeons, Dr. Fernando Ocaranza considers that the present School of Medicine was derived directly from the Royal College, through the link constituted by the above mentioned Establishment of Medical Sciences.

Finally, we must note three complementary facts to this narrative of pioneering and achievement: the noteworthy performance of the extinct Mexican Surgical Society, which flourished magnificiently in the dawn of the present century; the founding of the Mexican Academy of Surgery on January 13, 1933, and which at the present time is the supreme National institution of its type, the guiding spirit of the ancient School of Medicine, in which it is housed; and lastly, the establishment of the Mexican Chapter of the International College of Surgeons on March 20, 1939.

The creation of the Mexican Chapter of the International College of Surgeons will enhance the advancement of surgical history of Mexico. Following the invitation extended by the Mexican Government, the International Executive Council of the International College of Surgeons resolved unanimously on February 14, 1940, to hold the next International Assembly of the College in Mexico City from the tenth to fourteenth of August, 1941.

Mexican surgeons, the sons of a young country with a noble and ancient culture, look hopefully and with confidence into a future of greater and constantly increasing achievement of Mexico. Members of the Mexican chapter of the College and Mexican surgeons at large are looking forward with anticipation to a brilliant assembly in 1941 and cherish the hope of a genuine appreciation of the great Pasteur's teaching by surgeons of *all civilized lands*, "La science n'a pas de patrie."

Manuel A. Manzanilla

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PROGRESS IN UROLOGICAL SURGERY DURING THE LAST DECADE

FRANCISCO CASTILLA NAJERA, M.D., F.A.C.S., F.I.C.S.

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MEXICO CITY, MEXICO, AND WASHINGTON, D. C.

PERHAPS in no other department of general surgery and its affiliated collateral branches has sound and substantial advancement been more consistently marked and rapid than in the realm of operative treatment of diseases of the genitourinary system. This fact is attributed in large measure to refinement in methods of diagnosis and more careful selection of cases, primarily in consequence of cystoscopy, radiography and procedures for estimation of functional capacity or sufficiency.

By the same token, few periods in the history of urology are more replete with brilliant achievements than that which will be reviewed in the course of the present survey. Only the more significant of these exploits will be discussed briefly in chronological order.

Visualization of the urinary tract by means of intravenous injection of certain substances has ever since its adoption as a routine practice constituted an invaluable aid for determination of functional activity. The original method of von Lichtenberg and Voelcker was in 1929 greatly facilitated by Hryntschak's technic of combined pyeloscopy, and intravenous or excretory urography was in the same year rendered possible by the discovery of uroselectan by Swick, Bins and von Lichtenberg. Investigation of functional activity of the urinary tract was further simplified by the *hydrophoragraph* described by Trattner in 1930, the *cinex-camera* introduced in that same year by Jarre and Cumming, and the method of *serial pyelography* announced by Moore in 1932.

While the essential factor in *prostatectomy* by the method of Freyer, namely, enucleation of the gland, had until then been retained, Harris in 1929 materially improved the technic of the procedure by devising and inaugurating an ingenious plan of reconstruction of the prostatic cavity, this innovation representing, in the opinion of qualified authorities, one of the most important advances in prostatic surgery since the original report in 1900 of the method invented by Freyer. However, the year 1932 witnessed the almost general adoption of the method of transurethral resection as a substitute for the conventional operation of prostatectomy. The successful results obtained with the transurethral technic amply demonstrated the wisdom of this departure from long established precedent. Foley in 1933 presented a detailed description of his instrument for electroresection which he prosposed to employ for the operation previously performed with punch instruments. In the same year Herbet stated it as his conviction that electroresection had already been adopted and utilized in at least 75 per cent of cases of urinary obstruction caused by the prostrate gland, and this attested to the excellent reception accorded the procedure by urologists.

PROGRESS IN 1936

The succeeding triennium was characterized by a more or less universal

attitude of *extreme conservatism toward operations for the relief of genitourinary disorders.* A meticulous examination of existent sources of reference fails to reveal a signal advance in the field of urological surgery. Although the procedure of renal sympathectomy established by Papin and Ambard in 1924 had subsequently been employed most satisfactorily by Hess, Harris, Kidd and others, it was not immediately adopted and for a long time was not generally utilized. But in 1936 Gibson, after a careful study of the subject, asserted that the operation produced no deleterious effects, that it appeared surgically feasible alone or in conjunction with other procedures, and that it was indicated more or less positively in numerous conditions. *This statement served to restore the method to its former well merited estate.* In 1936 also, Dambrin claimed credit for the invention and execution (in 1932) of an operation for total denervation of the kidney by complete section of its nerves from the sympathetic centers. Dambrin supplemented the incomplete procedures of decapsulation alone and instrumental denervation alone with the application of a preparation of phenol to both the decapsulated cortex and the renal pedicle.

Hryntschak in 1936 described his experiments involving the *healing power of the ureter following resection,* whereby he demonstrated that resumption of normal function after transverse section of a ureter is physiologically possible, and thus effectively opposed the widespread belief to the contrary. Hryntschak is of the opinion that the two chief requirements for healing of a transverse cut in the ureter are temporary diversion of the urine through nephrostomy, pyelostomy, or ureterostomy, and splinting of the injured ureter with a ureteral catheter.

The year 1936 was distinguished particularly by noteworthy *experiments with several anesthetics.* Tovell and Thompson proved that penthothal sodium is well adapted in urological practice for many cases where a general anesthetic is necessary, and that almost any type of instrumentation is practicable following induction of anesthesia by intravenous administration of that agent. Caporale presented an extremely novel method of anesthesia termed by his colleagues peridural segmentary anesthesia, and consisting of the injection into one of the last dorsal intervertebral spaces of about 30 cc. of a relatively more concentrated anesthetic solution than that used ordinarily for local anesthesia. This solution rapidly spreads superiorly and inferiorly over from eight to ten vertebral segments, infiltrates the intervertebral canals along the spinal nerves, penetrates the latter, and produces brief, intense, complete anesthesia of the respective region.

A report of the results of their study of the *rate of excretion and bactericidal potency* of phenylglyconic (mandelic) acid in urine was published in 1936 by Helmholz and Osterberg. Through observation of the excretory rate following oral ingestion of the sodium salt by man and its intravenous injection into dogs, they established criteria for the concentration of the acid and the hydrogen ion concentration of the urine necessary for bactericidal action on numerous strains of organisms previously isolated from urine of persons with infections of the urinary tract.

Hinman and Weyrauch in 1936 undertook a critical study of different surgical principles applied in *uretero-intestinal implantation.* Of the total of eleven such principles comprised in their investigation, the submucosal principle appeared to possess a distinct theoretical advantage and to show the best results in practice. During this study it was revealed that virtually all modern technical methods for the purpose in question include it either as the primary or the secondary principle; even the latest

methods which utilize the intact ureter with the idea of asepsis have been proved to be primarily submucosal.

PROGRESS IN 1937

Early in 1937 Schneider and Wildbolz announced the outcome of experiments designed to elucidate the *alterations induced by denervation of the kidney* in an endeavor to render indications for the operation somewhat more definite. The "thermostromuhr" method devised by Rein was utilized. After the normal flow of blood for several hours through the kidney of a dog had been established and registered, the kidney was denervated. Both artery and vein were carefully freed of visible nerve fibers, chemical sympathectomy was omitted and the ureter was left intact. A uniform result was noted, namely, a brief period of contraction of blood vessels and diminished flow of blood, followed first by a period of instability, then an increase of flow of from one and one-half to two and one-half times the original flow. On immediate decapsulation, the flow was increased by one-fifth, while decapsulation alone without denervation produced an increase of one-fifth in the rate of flow. Total denervation was demonstrated by means of various well established reactions to which experimental animals were subjected, but chiefly by artificial respiration with air of high carbonic acid content. It was found that *the normal kidney reacted to a high carbonic acid content in the blood by a marked dimiution in the flow,* despite a rise in blood pressure, while *in a denervated kidney a high carbonic acid content in the blood caused a marked increase in the flow of blood.*

In a contribution submitted in 1937 Moore described an improved method for *cystoscopic removal of ureteral stones.* Later during the same year McKay contrived an original type of dislodger, by utilizing the principle of multiple catheters, but substituting four long silk threads attached to a small whalebone bougie. McKay recommended that the instrument be passed beyond the stone, with the ureter well dilated, whereupon by pulling on the threads and holding the filiform bougie firmly it would become slightly bowed, the stone then being entrapped by twisting, and brought down into the bladder by traction. Moore subsequently modified this procedure by passing the filiform device carrying the threads well beyond the stone, even as far as the renal pelvis, then withdrawing it by traction only, with no attempt to induce bowing. The method thus perfected proved to be quite satisfactory when the ureter had been thoroughly dilated and a few cubic centimeters of sterile oil injected prior to insertion of the dislodger.

In the middle of 1937 Shih attracted the attention and interest of urologists everywhere by his report of the discovery of an exceedingly rare anomaly, so called *postcaval ureter,* the fifth thus far encountered at the time of operation. The kidney was found badly diseased, the upper portion of the ureter being greatly dilated, and lying close to the lateral border of the inferior vena cava. Instead of maintaining its lateral position, it passed posteriorly to the vena cava and then forward between the vena cava and the abdominal aorta, above their points of bifurcation. Winding anteriorly, it again crossed the vein, resuming its normal course to the urinary bladder. The portion of the ureter wound around the vena cava was not dilated and was intimately adherent to the great vessels. Nephrectomy was clearly indicated and was performed. However, Shih states that the procedure of choice, whenever possible, is to divide the ureter, disengage it from the vena cava and reestablish its continuity. Early recognition of the anomaly when it exists and prompt institution of operative correction are necessary to save the kidney.

At about the same time in 1937 Jarman and Scott introduced *avertin as a relaxing agent in the manipulative removal of ureteral calculi.* The calculus was recovered in all but two out of twenty-seven cases in which multiple catheters were employed in conjunction with instillations of a two per cent solution of avertin.

A number of other conspicuous attainments in the specialty of urological surgery during the decade which has just elapsed might be cited and summarized here. However, when the complete history of urology is finally recorded by the chroniclers of medical lore, many illustrious names and distinctive accomplishments which have perforce been excluded from our succinct résumé of the subject will receive well merited recognition and acknowledgment. Meanwhile, let us regard the solid progress which has characterized the continuous evolution of surgery of the genitourinary system as a presage of an even more glorious victory over disability and death from diseases of the latter in the future.

SUMMARY

In reviewing the progress of urological surgery during the last decade, the author discusses visualization of the urinary tract; the reinstatement of surgery among the recognized surgical specialties; experiments with anesthesia, among them peridural segmentary anesthesia; the principles applied in ureterointestinal implantation; alterations induced by denervation of the kidney; and improved methods of cystoscopic removal of ureteral stones, among them use of the filiform bougie.

RÉSUMÉ

Le progrès de la chirurgie des voies génito-urinaires durant les dix dernières années

L'auteur discute la visualisation des voies urinaires; l'emploi de procédés chirurgicaux comme méthodes de traitement; les recherches sur l'anesthésie surtout l'anesthésie segmentaire péridurale; les principes de l'implantation urétéro-intestinale; les altérations déterminées par la dénervation du rein; les methodes perfectionnées pour l'ablation des calculs uréteraux et l'emploi des bougies filiformes.

ZUSAMMENFASSUNG

Fortschritte in der urologischen Chirurgie im letzten Jahrzehnte

Bei der Durchsicht der Fortschritte in der urologischen Chirurgie in letzten Jahrzehnte bespricht Verfasser die Darstellung des urologischen Traktes, die Wiedereinsetzung der Chirurgie als Methode der Wahl, Resultate von Experimenten mit Betäubungsverfahren unter anderem mit periduraler, segmentärer Betäubung, die Grundsätze für Ureterentransplantation in den Darm, Veränderung nach Entnervung der Niere, und verbesserte Methoden zur zystoskopischer Entfernung von Ureterensteinen, unter anderm Verwendung von filiformen Bougies.

SUMARIO

Progreso en cirugía urológica en la ultima decada

Al revisar el progreso de la cirugia urologica durante la ultima decada, el autor discute visualizaciones del tracto urinario; de restitución de cirugía como un método de tratamiento; resultados y experimentos con anestesia, entre ellas anestesia segmentario peridural; el principio aplicado en implantación uretero-intestinal; alteraciones inducidas por denervación de los riñones; y métodos mejorados de extraciones de piedra por método cistoscópico, entre ellos el uso de bugias filiformes.

RIASSUNTO

Il progresso nella chirurgia urologica durante l'ultima decade

Riesaminando il progresso della chirurgia urologica durante l'ultima decade, l'autore discute la visualisazione del tratto urinario; il ristabilimento della chirurgia come metodo di cura; i risultati di esperimenti con l'anestesia, fra le quali l'anestesia segmentare peridurale; i principi applicati nell'impiatazione utere-intestinale; le alterazioni causate da denervazione del rene; e metodi migliorati del rimovimento cistoscopico di pietre ureterali, fra le quali l'uso della tenta incerata filiforma.

ANNUAL PRIZE ESSAY ON ANESTHESIA

$250 and a Gold Medal for the Best Essay on Anesthesia

(Grant of Anglo-French Drug Companies of New York and Montreal, Canada)

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Dr. A. Mario Dogliotti, Catania, Italy

Essays must reach the International Secretary, Dr. Max Thorek, 850 W. Irving Park Blvd., Chicago, Ill., not later than May 1, 1941. They must be typewritten in English in manuscript form, double space, and must not exceed 5,000 words in length. The original must be accompanied by four carbon copies.

SUPERIOR RENAL SYMPHYSIS

WITH CASE REPORT

MANUEL A. MANZANILLA, M.D., F.I.C.S.

Member of the Mexican Academy of Surgery
Member of the National Academy of Science

MEXICO CITY, MEXICO

ANATOMICALLY there are two kidneys, right and left, symmetrically situated on either side of the spine at the level of the last two dorsal vertebrae and of the second or third lumbar vertebrae, with the right kidney approximately two centimeters lower than the left. The upper poles, which are larger than the lower poles, are about 4 cm. from the median line, while the lower poles, which are more elongated, may be as much as 6 cm. from the median line.

Kidney anomalies may be classified according to: (1) *number*: agenesia, single kidney, supernumerary kidney (exceptional); (2) *size*: atrophy, general hypertrophy, localized hypertrophy; (3) *shape*: fetal or lobulated kidney, plain, rounded, lengthened, flattened, crescent or horseshoe shaped, annular, sigmoid, discoid or biscuit shaped, twofold, sloped, constricted with bifurcation of ureter, etc.; (4) *position*: low lumbar, sacroiliac, pelvic ectopia; unilateral, bilateral, homolateral, crossed ectopia.

Anomalies of shape are varied and occur frequently. Some authors consider that many in this group are congenital malformations caused by fusion of the kidneys.

These anomalies arise from (a) errors of formation and (b) errors of position.

Certain anomalies of malformation are of surgical interest: congenital absence of one kidney (with greater development of the single kidney), bilateral agenesia, supernumerary kidney in the median line between the two kidneys, renal symphysis (to which further reference will be made), double kidney with or without double ureters (usually unilateral and of interest because of its pathological complications), hydronephrosis, hydropyonephrosis, lithiasis, tuberculosis, tumors (rare, according to Mertz, Braasch, Young and Davis), fetal kidney in which the lobulated form with sulci persists in the adult (simulating a double kidney when the sulci are deep).

Anomalies due to position having surgical interest are: congenital ectopia of true kidney ectopia (low lumbar, sacroiliac, pelvic), unilateral or bilateral, direct (homolateral) or crossed; congenital mobile or floating kidney (Zondek).

A dislocated kidney frequently becomes diseased, a fact that has induced some surgeons to remove it in order to frustrate affections of the opposite, healthy kidney. Pelvic renal ectopia may cause dystocia.

Congenital dislocation of the kidney is distinguished from accidental dislocation by: (1) the position of the kidney, which is fixed in congenital dislocation, mobile in accidental; (2) shape, this being more or less altered in the congenital type, normal in the accidental; (3) vascularization, the renal artery springing from the nearest trunk of the lower end of the aorta, from one of the iliac arteries or from the middle sacral artery in the congenital type, whereas in the accidental type the vascular pedicle is elongated in proportion to the degree of dislocation, without change of vascular re-

lationship, since the blood vessels have their normal origin; and (4) length of the ureter, being relatively short in congenital dislocation and of usual length in accidental dislocation.

mass, with two pelves and two ureters, in a median prevertebral, pelvic or presacral position or in contact with the rectum or bladder.

(5) Unilateral, from fusion of super-

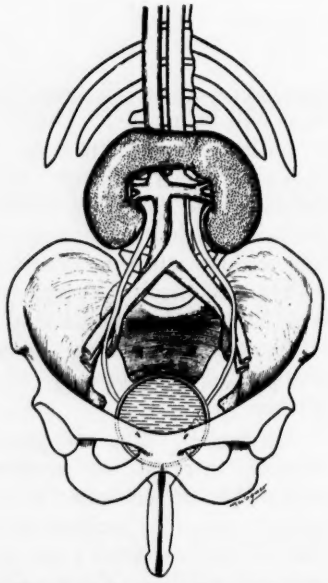

Fig. 1. Left. Superior renal symphysis, showing fusion of the upper poles. Kidney is horseshoe shaped, with inferior concavity.

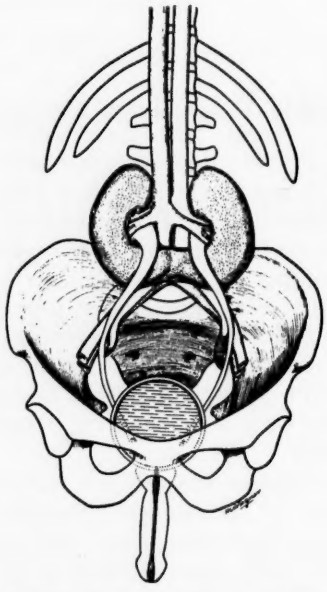

Fig. 2. Right. Inferior renal symphysis, showing fusion of the lower poles. Kidney is horseshoe shaped, with superior concavity.

RENAL SYMPHYSIS

Renal symphysis results from polar or marginal fusion of the kidneys; it can be classified as follows:

(1) *Superior,* fusion of the upper poles (fig. 1), the kidney being crescent or horseshoe shaped, with inferior concavity (very rare).

(2) *Inferior,* the result of fusion of the lower poles (fig. 2), the kidney being crescent or horseshoe shaped with superior concavity (relatively frequent).

(3) *Annular,* the result of fusion of the upper and lower poles, the kidney being ring shaped (very rare).

(4) *Discoid,* from fusion of the medial borders, the kidney being discoid or biscuit-shaped, i.e., constituting a single

imposed kidneys, unilateral in location, with one kidney, usually the lower one, crossed over the other and provided with two ureters, two sets of blood vessels, two hila; fusion of the upper pole of one kidney with the lower pole of the other results in the sigmoid type (extremely rare).

In the present study I shall describe a roentgenographic observation of superior renal symphysis, the kidney being crescent or horseshoe shaped with inferior concavity.

This type of anomaly, which is very rare, is characterized by fusion of the upper poles of the kidney in the median line; the tissue of the union forms the isthmus, thick and wide or thin and nar-

row, parenchymatous, fibrous or cellular. This anomaly rarely requires surgical treatment, but some interventions may become necessary if pathological conditions are present; nephrotomy or pyelotomy because of lithiasis (Uffreduzzi), or partial nephrectomy because of pyonephrosis, tuberculosis, tumors, etc., may become indicated (Socin). Abnormality in the relation of blood vessels increases the danger of hemorrhage. In partial extirpation of an anomalous kidney, one must proceed cautiously because a clear line of demarcation does not always exist (Thorek).

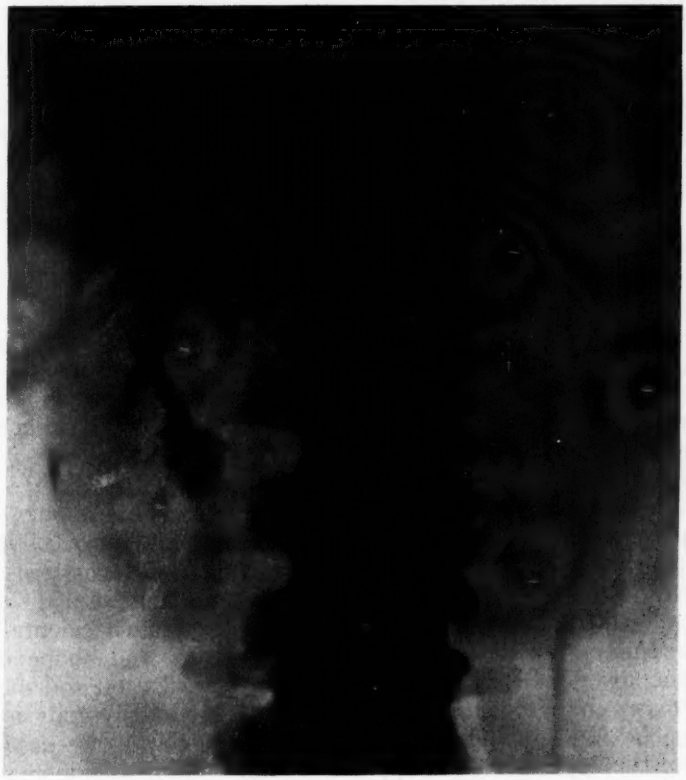

Fig. 3. Roentgenogram of M.P. Scoliosis of spine deviated to the left. Lower pole of left kidney dislocated to left; left kidney rotated.

Malformations may be encountered at operation or at autopsy, or they may be diagnosed by roentgenograms. Nevertheless, interpretation of roentgenograms of the kidney is often difficult because of lack of density, so that the contours are not clearly visible, and, in addition, they are often altered by neighboring organs. The kidney, when visible, is typical, being of uniform density and in appearance differing but little from that of the psoas muscle; it is slightly opaque, and its contours in the region of the lower pole are sufficiently visible, although the upper pole is distinguished with more difficulty because of the various abdominal shadows surrounding it. The roentgenographic diagnosis alone can be only topographic and descriptive, but when the roentgenographic and clinical diagnoses are coordinated, much information is gained and light is thrown on the subject. Col-

laboration between the attending physician and the roentgenologist is therefore indispensable.

Consultation with Dr. Bernardo Reina preceded the final diagnosis of the case of M.P.; an intravenous pyelogram made of this patient is shown in Fig. 3. The film was taken with the patient in the dorsal decubitus, 15 minutes after uroselectan was injected intravenously. The right kidney shadow was in usual position, with the renal pelvis at the level of the upper border of the third lumbar vertebra; the upper pole was slightly veiled by gases in the transverse colon. The left kidney shadow was better defined; the upper pole was situated immediately below the eleventh rib (projection of its dorsal extremity); the lower pole was at the level of the left transverse apophysis of the third lumbar vertebra; the lumbar spine, which was scoliotic, presented an arch with its convexity to the left, dislocating somewhat the lower, but not the upper, pole of the kidney; the body of the kidney was in rotation with the renal pelvis projected axially and with the ureter descending nearer the lateral than the medial border of the kidney. Roentgenologic interpretation read: Lumbar scoliosis with dislocation of the lower pole of the left kidney, without any change in the position of its upper pole. We concluded that the dislocation of the upper pole was apparently due to the existence of superior renal symphysis, a condition which caused the rotation, this, in turn, resulting in the altered position of the shadows of the renal pelvis and ureters, as described above.

The patient consulted me because of indigestion, due, it was thought, to a catarrhal condition of the biliary passages. Cholecystography revealed nothing abnormal. Examination of the bile (Meltzer-Lyon) showed that it was slightly turbid in appearance, with copious sediment, many crystals of biliary salts, numerous filaments of mucus, leucocytes, epithelial cells and some erythrocytes; the bile culture disclosed colonies of colon bacilli and staphylococci.

Genitourinary examination (Heitz-Boyer method) disclosed no pathology of the genitalia. Very few colon bacilli were found in the urine from the left ureter. The amount of urine obtained from the right ureter was slightly more than that obtained from the left. A urogram (after the previous injection of a contrast medium) was interpreted with difficulty, but it established the existence of a renal anomaly due to malformation, which did not require surgical interference.

The difficulty of interpreting the roentgenogram and the rarity of the congenital malformation observed in this case are the theme of this study. Correct diagnosis was established by coordinated evaluation of the physical and roentgenologic criteria.

SUMMARY

Kidney anomalies vary as to number, size, shape and form. They result from congenital malformations or errors in position. Congenital dislocation is distinguished from accidental dislocation by the position and shape of the kidney, its vascularization and the length of the ureter. Renal symphysis results from fusion at the poles or margins of the kidneys. This fusion may be superior, inferior, annular, discoid or unilateral. In the case described, the roentgenograms showed the lumbar spine to be scoliotic, arching to the left; the lower pole of the left kidney was displaced to the left; the upper pole was in normal position; the body of the kidney and the ureter were displaced laterally. Operation was not performed.

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RÉSUMÉ

Symphyse rénale supérieure

Les anomalies des reins varient par rapport au nombre, aux dimensions et à la conformation de ces organes. Ces anomalies sont le résultat d'erreurs de dévelopement et de déplacement. Les dislocations congénitales se reconnaissent par la position et par la forme au rein, par sa vascularisation et par la longueur de l'urétère. Sous tous ces rapports, elles différent des déplacements acquis. La symphyse rénale resulte de la fusion des pôles ou des côtés des reins. La fusion peut être supérieure, inférieure, annulaire, discoïde ou unilatérale. Dans le cas décrit par l'auteur, la region vertébrale lombaire etait scoliotique, avec convexité à gauche; le pôle inférieure du rein était luxe à gauche, mais le pôle supérieur était en position normale; le corps du rein était en état de rotation et l'urétère était déplacé lateralement. Une intervention chirurgicale n'était pas indiquée.

ZUSAMMENFASSUNG

Obere Nierenverschmelzung

Nierenanomalien wechseln an Zahl, Sitz, Form und Art. Sie sind die Folge von Entwicklungs- oder Stellungstörungen. Angeborne Verschiebungen lassen sich unterscheiden von traumatischen durch Stellung und Form der Niere, Blutversorgung und Länge des Ureters. Eine Nierenverschmelzung ist die Folge der Vereinigung an den Polen oder an den Rändern der Nieren. Diese Vereinigung kann eine obere, untere, ringförmige, kuchenförmige oder einseitige sein. Im vorliegenden Falle bestand eine linksseitige Skoliose. Der untere Nierenpol war nach links verschoben, der obere Pol dagegen in normaler Stellung. Die Niere selbst war gedreht und der Ureter nach aussen verlagert. Ein chirurgischer Eingriff war nicht angezeigt.

SUMARIO

Sinfisis superior renal

Las anomalias de los riñones varian con respecto á número, medida, y forma; ellos resultan de errores en formación y posición. Dislocación congénita son distinguidas de dislocaciones accidentales por la posición y forma del riñon, su vascularización y el largo del ureter. Sinfisis renal resulta de la fusión de los polos ó margines de los riñones. Esta fusión puede ser superior, inferior, annular, en forma de disco ó unilateral. En el caso descrito la espina lumbar era escoleótica, arqueando hacia la izquierda, pero el polo superior estaba en posición normal; el cuerpo del riñon estaba desplazado lateralmente. Cirugía no fue indicada.

RIASSUNTO

Sinfisi renale superiore

Anomalie dei reni variono in quanto a numero, dimensione, figura e forma; risultano da errori in formazione o posizione. Lussazioni congenite si distinguono da lussazioni accidentali per la posizione e la forma del rene, il suo vascularizzazione, e la lunghezza dell' uretere. La sinfisi renale risulta dalla fusione ai poli o margini dei reni. Questa fusione può essere superiore, inferiore, anulare, discoide, o unilaterale.

Nel caso descritto, la spina dorsale lombare era scoliotica, incurvando alla sinistra; il polo più basso del rene fù spostato alla sinistra, ma il polo superiore si trovava in posizione normale; il corpo del rene era in rotazione e l'uretere fù spostato lateralmente. La chirurgia non fù indicata.

ABBOTT LABORATORIES FELLOWSHIPS IN CHEMISTRY

For the academic year 1940-41, Abbott Laboratories has established fellowships in several universities with important departments of organic chemistry and biochemistry. The fellowships, carrying stipends of $650 per year, will be available to graduate students in the last or next to last years of graduate work leading to the doctorate degree. The recipients, who are to be selected by the universities in which their work is being done, are not limited as to the subjects on which they will work.

The object of the fellowships is to provide means for the carrying on of additional scientific work in American universities. The future progress of chemistry in this country will depend upon the availability of well-trained men, Abbott Laboratories in establishing these fellowships to lend encouragement in these general fields.

Grants will be made to the following universities: in organic chemistry—Cornell, Harvard, Illinois, Michigan; in biochemistry—California, Columbia, Cornell.

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Dr. Wilbur A. Sawyer, director of the International Health Division of the Rockefeller Foundation, was awarded the first Leon Bernard Prize at a dinner of the League of Nations Association on January 29. The presentation was made by former Surgeon General **Hugh S. Cumming.** The award consists of a bronze medal and the sum of 1,000 Swiss francs. It is an international prize to reward practical achievements in the field of social medicine and its purpose is to perpetuate the memory of Professor Bernard, late member of the League of Nations Health Committee, by which the Leon Bernard Foundation was established in 1934. Dr. Sawyer was honored because of his achievements in the field of yellow fever and his success in extending medicosocial protection to the populations of many countries.

Dr. Jesse W. Bowers, F.I.C.S., of Fort Wayne, Ind., secretary of the Indiana State Board of Medical Registration and Examination, has been appointed a member of the National Board of Medical Examiners. The National Board will hold its twenty-fourth anniversary meeting in New York City on June 12, when Dr. Bowers will be inducted as a member.

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Dr. Lionel Ernest Howard Whitby has been awarded the John Hunter Medal and Triennial Prize by the Royal College of Surgeons of England for research work in "bacteriology with special reference to sulphonamide compounds."

THE NEXT INTERNATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD IN MEXICO CITY, MEXICO, AUGUST 10-14, 1941. DETAILS IN SUBSEQUENT ISSUES OF THE JOURNAL.

PRIMARY GIANT CIRSOID ANEURISMS

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MEXICO CITY, MEXICO

GIANT primary cirsoid aneurisms are seen but rarely, and while their diagnosis presents few, their treatment presents many difficulties. It is still a question as to whether they should be considered as aneurisms proper or as vascular tumors. Virchow, believing them to be tumors of the blood vessels, called them racemose arterial angiomas or *Renkenangiomas*. Dupuytren descriptively termed them arterial varices, while Gosselin named them cirsoids, from the Greek *cirso,* meaning varix. According to Delbet, they are characterized, not only by localized vascular induration and dilatation, but also by the establishment of numerous abnormal communications between the arteries and veins and more especially between the smaller branches and capillaries. Contemporary anatomic and pathologic studies confirm Delbet's findings.

In the cirsoid aneurism the earliest pathologic communications are between the arterioles and the veins. While cirsoid and arteriovenous aneurisms closely resemble each other, two characteristics distinguish them as shown by Delbet: Whereas in the cirsoid aneurism the communications are multiple and involve the capillaries, in the arteriovenous aneurism the communications are single and usually involve the larger vessels.

The tumefaction can be divided into two parts—the cirsoid itself and the portion consisting of the dilated afferent and efferent vessels. In a cut section the cirsoid presents the aspect of an areolar and cavernous body containing numerous cavities of variable size, 3 mm. or less in diameter. The walls of these cavities may resemble the walls of arterioles of medium caliber, lined with columnar epithelium and surrounded by three thin tunics which contain little elastic tissue; or they may resemble veins with an endothelium of polyhedral cells surrounded by muscle and connective tissue fibers.

The tumor, when covered with skin, has the appearance of a cluster of worms because of the many twisted, expanded and contracted afferent and efferent veins and arteries.

In regard to its origin, de Saint Germain stated, in 1844, "On this point everything is obscure and ill defined." Basset, writing at the present time, stated, "We do not know a great deal more today."

Usually it is considered to occur secondary to a congenital arterial angioma or more rarely to a venous angioma. Trauma is believed to be the inciting factor because it results in rupture of the capillaries and brings about communication between the arterioles and veins. Once communication is established, dilatation of the veins, both afferent and efferent, ensues. Some writers, among them Basset, believe that inflammation as well as trauma is necessary for their production.

Grossly a cirsoid aneurism is an irregular, somewhat diffuse, elevated tumor lying under the skin, which is tinged blue. It is relatively soft and partially compressible, returning quickly to its previous size with the removal of pressure. On palpation pulsations and a thrill (Hunter's thrill) will be felt synchronous with the arterial beat, and the impression transmitted to the examining hand is that of a mass of worms. A blowing murmur can be heard on auscultation over the aneurism; accord-

ing to Forgue, this may be one of several types. It may be continuous, with systolic reinforcement; biphasic, that is, with strong systole and weaker diastole; or simply systolic in the blood vessels outside the aneurism. With compression of the tumor the murmur, pulsation and thrill disappear.

The tumor is painless, even to pressure of the hand; but it may cause annoyance to the patient, making sleep difficult, principally because of the beating sensation which is constantly present. It is accompanied by tinnitus, a sensation of palpitation and intense headache.

The sites of predilection for these aneurisms are the scalp, face, hands and feet. They are usually superficial; the literature contains no references to cirsoid aneurisms of the viscera or other organs, but it is reasonable to suppose that they may develop in any other part of the body in which vascular tissue is present.

In regard to frequency, it can be said that just as angiomas, arterial or venous, are very frequent, primary giant cirsoid aneurisms are extraordinarily rare. In the 12 years of my practice in the surgical service of the General Hospital, Mexico City, I have seen about 5,000 surgical patients; I have treated, in addition, 1,000 surgical cases in private practice. Among these 6,000 patients I have found only one case of primary giant cirsoid aneurism.

A cirsoid aneurism sometimes develops with extraordinary speed, but usually it develops slowly and always by extension. It ultimately causes the overlying skin to ulcerate, producing severe hemorrhages which may result in death. Most authors agree that these vascular entities never heal spontaneously and therefore, to prevent loss of time, immediate treatment is advised.

Clinically, an aneurism is diagnosed easily. It is to be differentiated from arteriovenous aneurism and angioma, which are common. An arteriovenous aneurism affects the large vessels and has a single communication, pressure upon which causes the beat to disappear (Terrier's sign); in cirsoid aneurism, the beat disappears only when pressure is exerted over the entire surface of the tumor. Angiomas are congenital and appear as simple red or bluish areas, or as erectible tumors, but they are never pulsating on palpitation or auscultation.

Various types of treatment have been proposed to cure cirsoid aneurism—caustic pencils with zinc chloride, applications of iron perchloride, coagulating injections in situ, compression, distant ligatures, electropuncture, roentgenotherapy and lastly, extirpation. This last method is the procedure of choice. When cirsoid aneurisms are of the giant variety, partial, repeated excision is recommended until complete cure is attained.

CASE REPORT

Marcos M. C., Mexican, 37 years old, married, workman in a textile factory, entered the hospital May 2, 1939, with the diagnosis of left frontopalpebral angioma (fig. 1).

HISTORY. The family history was negative. He had typhus at the age of 10. Seven years previous to the present examination he had suffered trauma of the left frontal region. His present complaint was pain in the left half of the face; an irregular tumor was present in the frontal, superciliary and palpebral regions of the left side. This tumor was first noticed seven years ago following contusion of the left frontal region; a hematoma had appeared, which lasted only a week. A month later a small round tumor the size of a chickpea was noticed; it was soft and painless on pressure. During the next three years it increased slowly in size until it reached the size of a large orange. At that time an operation resulted in a reduction in the size of the tumor, but it was not removed completely (fig. 2). A month later spontaneous rupture of the tumor occurred, with copious hemorrhage, one liter of blood being lost, according to the patient. Ligation stopped the hemorrhage. Following this emergency operation, the tumor remained stationary and no further accidents occurred during the succeeding three years. About a year before the present admission several more tumors appeared; these surrounded the primary tumor, the latter also showing increased

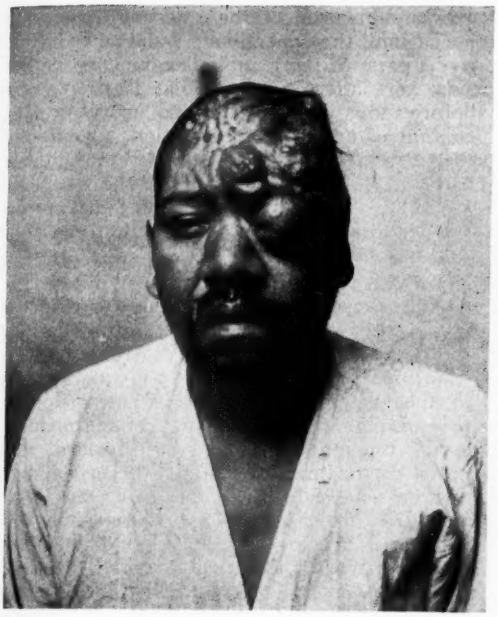

Fig. 1. Marcos M.C., Mexican, 37 years old, on entrance to hospital with diagnosis of left frontopalpebral angioma.

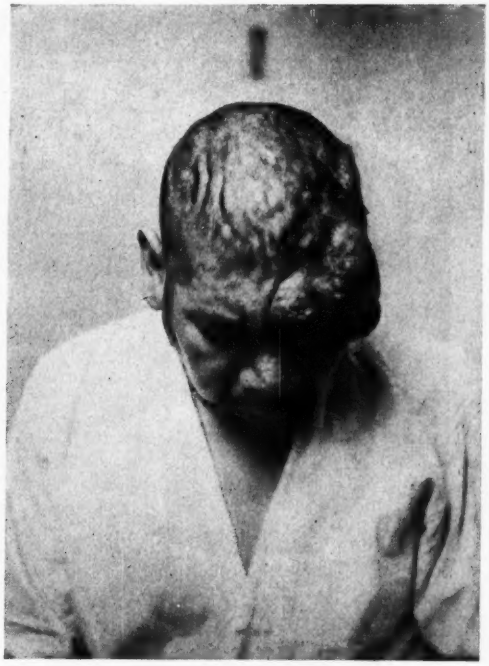

Fig. 3. Anterior view of tumor.

Fig. 2. Marcos M.C., after partial removal of tumor.

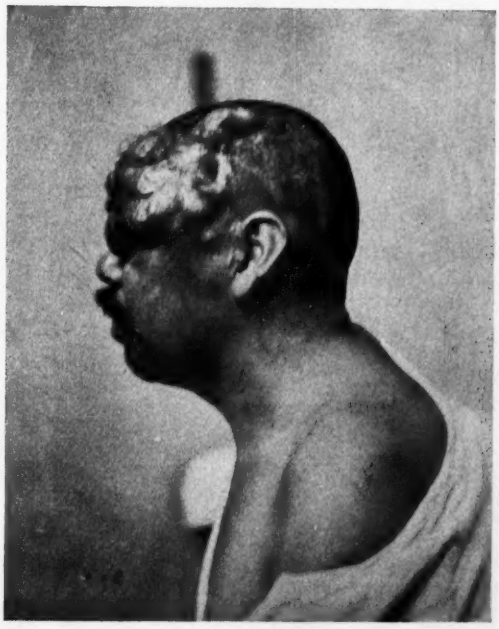

Fig. 4. Lateral view of tumor.

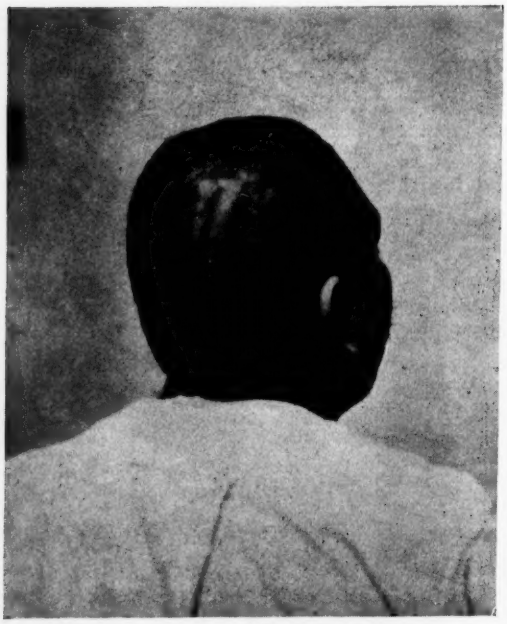

Fig. 5. Posterior view, showing right side unaffected.

growth. Invasion of the adjacent tissues followed until the superciliary, palpebral and anterior parts of the temporal regions of the left side were affected (fig. 3-5). Eight months before admission to the hospital, neuralgic pain, continuous and without radiation, appeared at the site of the tumor and extended to the lower half of the face. Fortunately, the neuralgia lasted but a short time. Finally, the patient developed total loss of vision of the left eye.

EXAMINATION. The patient was of fair physical development. His height was 1.7 m. and his weight, 72 kg. The blood pressure was 120/65; pulse, 60, full and of normal rhythm. A tumor occupied the frontal, superciliary and palpebral regions, the anterior half of the temporal and the left anterosuperior parietal regions. It was irregular and nodular, giving the impression of being formed of a group of tumors. Soft and elastic, it could be compressed easily with the hand, but it resumed its shape after pressure was removed. There was synchronous pulsation. The volume increased when the patient lowered his head. There was no thrill or murmur. The adjacent tissues were furrowed by varicosities connecting with the tumor. The rest of the scalp pre-

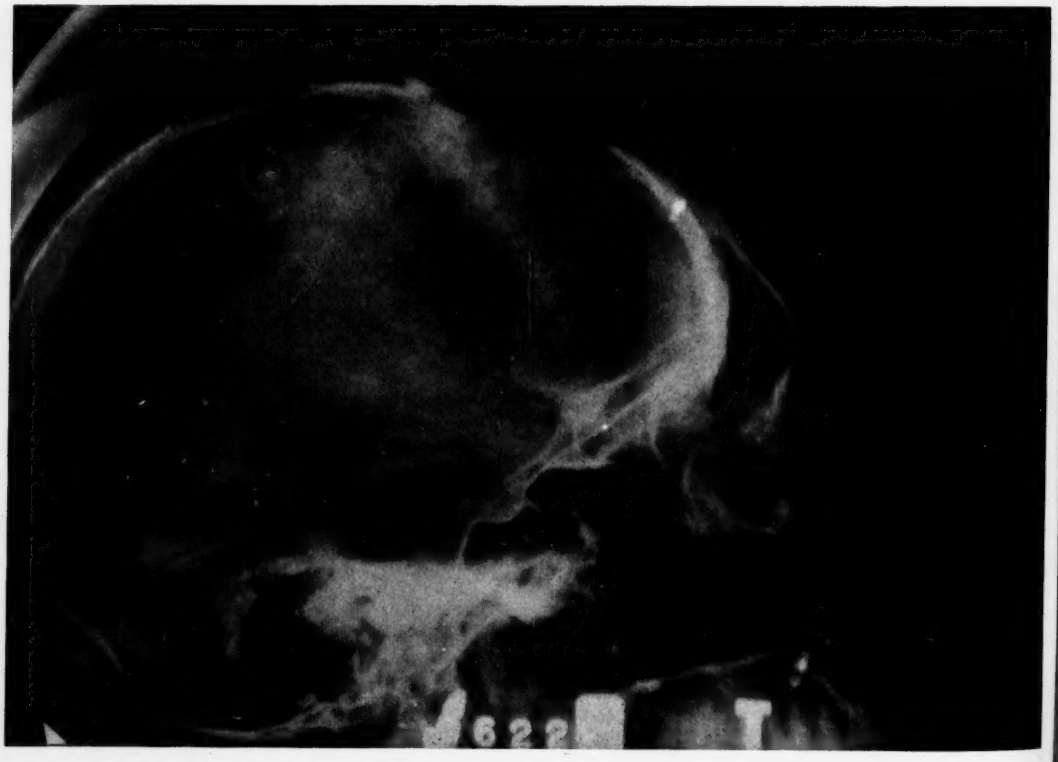

Fig. 6. Roentgenologic study of skull, lateral view, showing increased density of bone in affected area.

sented many sulci and protuberances, most of them in the anteroposterior region. The protuberances were soft and compressible; no movement, blow or thrill could be perceived in them.

normal, except that the upward movement was restricted. Ocular tension was highly increased. The tumor was an extension of the one from the head and invaded the orbit, resulting in intraocular hemorrhage, secondary glaucoma

Fig. 7. Roentgenologic study of skull. anteroposterior view, showing increased density of bone in affected area.

Examination of the left eye showed partial destruction of the eyeball, ptosis and irregular thickening of the upper lid; direct inferior exophthalmos, reducible and pulsating; congestion of the bulbar conjunctiva; moderate opacity of the cornea; and loss of light perception. The movements of the eyeball were and perforation followed by staphyloma. The right eye was normal.

Laboratory examinations were negative. Roentgen ray studies of the skull showed increased density of the bone in the affected area but no lesions of the cranial vault (figs. 6 and 7).

OPERATION. In accordance with the therapeutic indications stated previously, the tumor was extirpated in five stages, on May 18, June 16, July 15, August 5 and August 23, 1939. The patient left the hospital September 23, completely cured.

The operations consisted of rapid and partial extirpation of each of the tumors, with immediate suture of the scalp to stop bleeding. An electric bistoury was used first, but since this had no advantage, the metal one was used subsequently. Postoperatively, several transfusions of blood (250 cc. each) were given. In the last operation, performed by an ophthalmic surgeon, Dr. Lino Vergara, the left eye was enucleated and the left upper lid was resected, this harboring the only remaining part of the tumor. Dr. Genaro Márquez, who had referred the patient, assisted in the first four operations.

SUMMARY

Cirsoid aneurism is a rare affection. The author has seen only one case among 6,000 surgical cases treated during the last 12 years. It is usually considered to occur secondary to a congenital angioma. Trauma may be the inciting factor. The case here reported developed following trauma, but the previous existence of angioma was not detected. The invasion of the eye necessitated enucleation. Recovery followed. The treatment of choice is excision with a scalpel in one or several stages. The prognosis is always serious.

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RÉSUMÉ

Anévrisme cirsoïde géant primaire

Cette affection est rare. L'auteur n'en a rencontré qu'un cas dans une série de six mille cas chirurgical traités durant les douze dernières années. La plupart des auteurs sont d'avis que ces anévrismes sont secondaires à des angiomes congénitaux. Un traumatisme peut être le facteur provocatif. Le cas de Garcia suivi un traumatisme. Il n'y avait pas d'angiome pré-existant. L'oeil fut énucléé. Guérison. Le traitement de choix est l'ablation en plusieurs temps. Le pronostic est toujours grave.

ZUSAMMENFASSUNG

Primäres Riesen-Cirsoid-Aneurysma

Cirsoidaneurysma ist eine sehr seltene Erkrankung. Der Autor hat innerhalb 12 Jahren unter 6000 chirurgischen Fällen nur eines gesehen. Es ist gewöhnlich als sekondär nach einem angeborenen Angiom betrachtet. Trauma kann der auslösende Faktor sein. Der hier aufgeführte Fall entwickelte sich nach einem Trauma, aber die Existenz eines vorhergehenden Angiomas konnte nicht nachgewiesen werden. Die Invasion des Auges machte eine Enucleation nötig. Heilung folgte. Wahlbehandlung ist blutige Excision in einer oder mehreren Sitzungen. Die Prognose ist immer zweifelhaft.

SUMARIO

Aneurisma cirsoideo gigante primario

Aneurisma cirsoideo es una afección rara. El autor ha visto solamente un caso entre 6000 casos quirúrgicos tratado durante los 12 ultimos años. Es usualmente considerado que ocurre secundariamente á un angioma congénito. El caso repotado aqui se desarrollo siguiendo á un traumatismo, pero la existencia previa de un anioma no fué detectado. La invación del ojo necesitó enucleación. Mejoramiento siguió. Tratamiento á escoger es excisión con un bisturi en uno ó mas tiempos. El prognostico es siempre serio.

RIASSUNTO

Aneurisme cirsoidi primarie gigante

L'aneurisma cirsoide è una malattia molto rara. L'autore ha visto solo un caso fra 6000 casi chirurgici trattati negli ultimi 12 anni. Ordinariamente, l'aneurisma cirsoide occorre secondariamente a un'angioma congenitale.

Il trauma può essere il fattore causativo. Il caso qui riportato sviluppò dopo il trauma ma l'esistenza precedente di un'angioma non fù scoperta. L'invasione dell' occhio necessitò l'enucleazione. Guarigione seguì. Il trattamento migliore è la recisione col bistouri in uno o parecchi stadii perativi. La prognosi è sempre seria.

PAST PRESIDENTS HONORED

Living past presidents of the Northern Medical Association of Philadelphia were guests of honor at a testimonial banquet given by the Association March 18 at the Hotel Touraine, Philadelphia. Guest speakers were **Dr. W. Wayne Babcock,** F.A.C.S., and the **Hon. Charles Grakelow,** both of Philadelphia. Among the past presidents honored were **Drs. David Riesman** (president in 1902); **Thomas R. Currie** (1904); **Israel Binder;** Moses Behrend, F. A. C. S., F. I. C. S. (1916); **A. C. Morgan; Bernard Mann,** F.A. C.S.; **M. Bernstein; B. Ulanski; V. R. Manning;** and **Hyman I. Goldstein** (1939).

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Dr. Francisco Fonseca Garcia, secretary of the Mexican chapter of the International College of Surgeons, has been decorated by the French Government with the Academic Palms.

Professor E. Maragliano, professor emeritus of clinical medicine in the University of Genoa, founder of the first Italian institute for scientific and practical studies on tuberculosis, has died at the age of 91 years.

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Dr. James D. Bruce, of the University of Michigan, who was chosen president-elect of the American College of Physicians last year, was inducted into the office of president at the congress of the College held in Cleveland in April. He succeeded **Dr. O. H. Perry Pepper,** of Philadelphia. **Dr. Roger I. Lee,** of Boston, formerly professor of hygiene at the Harvard Medical School, was chosen president-elect.

Dr. Elliott P. Joslin, clinical professor of medicine, emeritus, at the Harvard Medical School, has been named successor to the late **Dr. Harvey Cushing** as honorary chairman of the Division of Medicine and Public Health of the President's Committee on University Development. The Committee is planning to secure additional endowment for the Medical School at Yale University.

REQUESTS FOR INFORMATION AND APPLICATIONS FOR ASSOCIATE MEMBERSHIP, MEMBERSHIP OR FELLOWSHIP IN THE INTERNATIONAL COLLEGE OF SURGEONS SHOULD BE ADDRESSED TO MR. RALPH E. OSBORNE, BUSINESS SECRETARY, 2543 PARKWOOD AVE., TOLEDO, OHIO.

GENERALIZED SPINAL ANALGESIA

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WHEN I was studying medicine in 1908, spinal anesthesia was the subject of lively discussion. This procedure had been introduced a few years before, and thanks to the work of Corning (U.S.A.), Bier (Germany) and Tuffier (France) it was becoming widely recognized. In the city of Oaxaca on July 2, 1900, Drs. Ramon Pardo, Luis Flores Guerra, Herminio Acevedo and Manuel Pereyra Mejía were among the first surgeons in Mexico to accept and practice spinal anesthesia. In Mexico City the first thesis on the subject was written by Everardo Landa and Adalid y Castillo. Aureliano Urrutia and Julían Villarreal were among the most ardent advocates of the method. Since that time spinal anesthesia has been so widely practiced in Mexico that this country can claim a *lieu d'honneur* in its history and advancement.

When spinal anesthesia was first practiced, it was resorted to only in operations on the abdomen and lower extremities; instances in which it was used for operations on the thorax and upper limbs were rare, indeed. The possibility of employing it in surgery of the head, neck and thorax was considered by many, among these being Chaput (1901), le Filliatre (1901-1904), Jonnescu (1908) and others. In Mexico those who attempted to use it in various regions were Villarreal, López, Urrutia, Adalid y Castillo, Padilla and Moreno.

Since 1908 I have been studying generalized spinal analgesia, and the results of my investigations have appeared in various theses published under my preceptorship, such as: "Supraspinal Analgesia," Vincente Meza (Mexico City) 1917; "General Analgesia by Injection of Cocaine in the Lumbar Spine," Enrique Rodarte (Mexcio City) 1918; "Experimental Questions on Spinal Anesthesia," Fernando López Clares (Mexico City) 1929; and "Generalized Spinal Anesthesia, Koster Method," Julio Z. Garza Cantú (Mexico City) 1935. All these are on the subject of general analgesia. I shall now present the results of 30 years of study. I shall sketch briefly the history of spinal analgesia, point out priority and describe technical details.

REVIEW OF LITERATURE

Chaput[1] stated, in 1901, "Most authors employing cocaine anesthesia in the lumbar region admit that it is useful for operations on the lower limbs, pelvis and lower part of the abdomen. . . . I agree with Tuffier in regard to operations on the abdomen and thorax. . . . Moreover, I believe that Tuffier's method can be easily applied to operations on the upper limbs and perhaps to head operations." In this article he described three major operations which he had performed on the upper extremities by means of spinal anesthesia, with cocaine. The first operation was a resection of the elbow; the second, resection of the olecranon; the third, amputation of the hand. In the first two, anesthesia was obtained in 9 to 11 minutes; in the third, anesthesia was incomplete, reaching only the third rib and the patient complained of pain; however, his complaints were mild and there was only a slight degree of tenseness. The writer stated that the cocaine had facilitated the operation and that without it the amputation would have been impossible, especially in a nervous and timid patient. He also re-

ported three operations performed above the thorax—one in the neck and the other two at the level of the lower jaw. From results obtained he concluded that analgesia in the head or neck had not proved satisfactory, inasmuch as patients complained of pain. He pointed out that cocaine causes mental anguish, partly because the patient hears all the details of the operation. He stated that spinal anesthesia presents difficulties when used higher up because analgesia appears slowly, large doses of cocaine are necessary and the sites for injection here are inadequate. He concluded that (1) high or total anesthesia can be obtained by the injection of cocaine, even in small doses; (2) in order to assure anesthesia of the upper extremities, 4 cg. of cocaine must be used; (3) anesthesia of the face or neck is not sufficient to warrant operating on these regions, partly because of the emotional distress produced in the patient by the operative manipulations; only when both general and local anesthesia are contraindicated should spinal anesthesia be employed for operations on the head; (4) isotonic solutions produce anesthesia less effectively than aqueous solutions because they seem to be less diffusible than the latter.

In 1900, Tait and Caglieri reported the use of cocaine (injected at the level of the sixth cervical space) in six cases with good results.

In 1901, Morton resected the maxilla under spinal anesthesia. He also reported (1901) 253 operations performed under spinal anesthesia, 8 of which were above the diaphragm. Later he reported a second series of 61 operations, 55 of which were performed on the head or upper extremities.

In 1908, Jonnesco advised puncturing the spine at different heights, according to the region to be operated upon; stovaine with strychnine and caffeine was recommended as the anesthetic. The fatal accidents which resulted from cervical or upper dorsal puncture made it necessary for him to abandon this method.

Le Fillatre, in 1918, described a method conceived in 1902 and consisting in the puncture of the sacrolumbar space, the withdrawal of a variable amount of cerebrospinal fluid, according to the height of anesthesia desired (25 cc. to produce anesthesia as high as the nipples, 30 cc. for the head) and the injection of cocaine solution, the amount depending upon the region to be anesthetized (1 to 1.5 cc. for the legs, 2 cc. for the subumbilical region and 3 cc. for general anesthesia, barbotage being practiced three or four times).

Delmas[2], of Montpellier, suggested in 1918 a method for obtaining general anesthesia consisting in puncture at the lumbodorsal space, with the patient seated, and the forceful injection into the subarachnoid space, using a Luer syringe (20 cc.), of 20 to 40 mg. of cocaine and 20 cc. of cerebrospinal fluid —a rather crude and dangerous procedure.

Koster[3] published an article on spinal anesthesia with special reference to its use in surgery of the cranium, neck and thorax. In 1924 he began using spinal anesthesia in operations below the diaphragm. After previous injection of morphine and atropine, he injected 100 mg. of novocaine dissolved in 4 cc. of cerebrospinal fluid, making the injection at the level of the second lumbar space, the patient in lateral decubitus (usually left); he obtained with this method anesthesia extending as high as the nipples; in an attempt to produce anesthesia of longer duration, he increased the dose to 20 cg. and the quantity of cerebrospinal fluid to 8 cc., placing the patient *afterwards* in the Trendelenburg positon; accidentally he discovered that the patient became totally anesthetized. According to Koster, vomiting often occurs, the respirations, almost diaphragmatic, being regular, slow and diminished in fullness. Koster stated that the Trendelenburg position prevents

accidents; that one need not be alarmed by pallor, perspiration or chilling on the part of the patient; and that these reactions are but the natural sequelae of high anesthesia. He advised no medication to increase systolic tension. The only contrindication to spinal anesthesia, in his opinion, is local infection at the point of injection. He had four failures, and in his opinion, in none of these was spinal anesthesia responsible for the failure.

Labat, in 1930, presented a slightly different technic, whereby morphine and scopolamine are injected before operation. For operations above the diaphragm the puncture is made between the twelfth dorsal and first lumbar vertebrae, with the patient seated; immediately after the injection he is placed in the Trendelenburg position, which is maintained for three or four hours after the operation is completed. French novocaine or neocaine, 10 to 20 cg. in 8 cc., is used, the injection being reinjected in operations above the diaphragm. Very rarely is general anesthesia produced by this method.

Veher, in 1931, made studies to determine the amount of novocaine needed to produce anesthesia of the head without causing paralysis of the cardiac or respiratory centers. He concluded that those centers are very resistant to the action of novocaine. He pointed out that whereas a dose injected into the spinal canal is tolerated, this same dose is not tolerated if injected into the cisterna magna. He believed the Trendelenburg position to be mandatory to avoid cerebral anemia. Veher used 20 to 24 cg. of novocaine in 3 cc., diluted to 6 cc., and made the injection in the second lumbar space. The Trendelenburg position (at an angle of 10°) was maintained from 4 to 24 hours after the operation.

Maxsson stated that the injection of 160 mg. in the sixth dorsal space produces sensory blockage of the entire body and motor blockage below the sixth dorsal vertebra, producing general anesthesia.

Fig. 1. Left. Spinal puncture with patient in right lateral decubitus. Puncture may be practiced, if preferred, with patient in vertical position; afterwards patient is inclined at an angle of 45°.

Fig. 2. Right. Patient inclined at angle of 45°. Only in this position must anesthetic be injected.

From this review, it will be observed that various procedures have been used for spinal anesthesia. Some of them, based on the level of the puncture (those of Tait and Caglieri, Morton, Jonnesco) have been abandoned because of resulting fatalities. Others, such as le Filliatre's method, decrease the tension of the cerebrospinal fluid, a method which I have used frequently, and even if fatalities do not occur, anesthesia is not always produced. Delmas' method, based on the speed with which the fluid is injected, in my experience did not yield the results claimed for it by its originator. The remaining procedure has as its basis the effect of the Trendelenburg position assumed immediately *after* the injection, the claim being that this position increases the diffusion of the anesthetic and prevents cerebral anemia.

From my own observations, general anesthesia is produced only rarely when the patient is placed in the Trendelenburg position *after* the injection. From studies made on patients I have reached the conclusion (expressed in the theses of Rodarte, 1918, and Garza Cantú, 1935), that to insure general anesthesia the patient must be placed *first* in an inclined position (at an angle of 45°) and the anesthetic then injected.

AUTHOR'S TECHNIC

I shall point out only those details of my technic which distinguish it from other methods.

PUNCTURE. The patient is placed in lateral decubitus, although he may be seated in a chair, if puncture is difficult; the initial position is relatively unimportant because the inclined position may be assumed after puncture and before injection of the solution. Puncture is made between the fourth and fifth or the third and fourth lumbar vertebrae (fig. 1).

SOLUTION. A solution of 0.2 cg. of novocaine in 10 cc. of cerebrospinal fluid is prepared. Two ampules of 0.15 cg. each can be dissolved in 3 cc. of cerebrospinal fluid; to 2 cc. of this solution (which contains 0.2 cg. of novocaine) is added 8 cc. of cerebrospinal fluid.

POSITION. The patient is then placed at an inclination of 45°, *before the injection* is made (fig. 2). This point distinguishes this method from the methods of others. The injection is made and the operative field is then prepared. When everything is in readiness, the Trendelenburg position is changed for the one desired at operation. At the conclusion of the operation, the patient is placed in bed and kept in a horizontal position for several hours. Although this is not indispensable, it is advisable to prevent or relieve headache.

I have performed the following operations, a total of 505, from December, 1934, until June, 1939, without a single accident:

Type of Operation	*No. of Cases*
Thyroidectomy	211
Amputation of Breast	88
Lobectomy	2
Pneumotomy	1
Thoracoplasty	68
Operation on Maxilla	8
Operation on Mandible	24
Uranostaphyloplasty and Plastic Surgery of Face	16
Extirpation of Tumor of Parotid Gland	9
Pharyngectomy	1
Extirpation of Tumor of Neck	15
Craniectomy	3
Extirpation of Tumor of Orbit	2
Operation on Upper Extremity	37
Enucleation of Eye	1
Esophagoplasty	3
Operations on Mastoid	3
Cervical Sympathectomy	3
Ligation of Carotid Artery	4
Operation in the Buccal Cavity	4
Operations for Scars on Neck	1
Removal of Tumor of Thymus	1
Total	505

In a later report I shall complete this study of my technic and will include the physiology, indications, contraindications, and other factors.

SUMMARY

A chronological study of the evolution of generalized spinal anesthesia is made. The author describes his personal technic and points out the ways in which his method differs from the methods of others. He lists 505 operations on the head, neck and thorax which he has performed according to this technic, without a single accident.

REFERENCES

1. Chaput: Presse med. (Nov. 9) 265, 1901.
2. Delmas: *Ibid.*, (Mar. 14) 1918.
3. Koster: Am. J. Surg., 1928.

RÉSUMÉ

Analgésie rachidienne généralisée

L'auteur fait une étude de l'évolution de l'anesthésie rachidienne généralisée. Il décrit sa technique personnelle et nous indique en quoi sa technique personnelle diffère des methodes préconisées par d'autres cliniciens. Il classifie 505 opérations sur la tête, le cou et le thorax dans lesquelles il eut recours à sa méthode.

ZUSAMMENFASSUNG

Allgemeine Spinalanästhesie

Die Entwicklung der Spinalanästhesie ist in geschichtlicher Reihenfolge betrachtet. Der Autor beschreibt seine persönliche Technik und hebt die Art und Weise in der sich seine Technik von anderen unterscheidet hervor. Er führt 505 Operationen an Kopf, Nacken und Brustkorb auf die er mit seiner Technik ausgeführt hat.

SUMARIO

Analgesia Espinal Generalizada

Un estudio cronológico de la evolución de anestesia espinal generalizada es hecho. El autor describe su método personal y llama la atención en la manera que su método se diferencia de los demas. El anota 505 operaciones en la cabeza, cuello y torax que él ha hacho de acuerdo á su técnica.

RIASSUNTO

Analgesia spinale generale

Uno studio cronologico dello sviluppo dell'anestesia spinale generale è fatto. L'autore descrive la sua tecnica personale e dimostra le maniere nelle quali il suo metodo è diverso dei metodi degli altri. L'A.compila una lista di 505 operazioni sulla testa, sul collo e sul torace che egli ha fatto secondo questa tecnica.

SUMMER SCHOOL CLINICS

Summer School clinics will be conducted under the direction of the Vancouver Medical association from June 25 to June 28, inclusive. Headquarters will be the Hotel Vancouver, Vancouver, B. C. Speakers will be **Drs. William S. Middleton,** dean and professor of medicine, University of Wisconsin Medical school; **Frederick L. Reichert,** professor of surgery, Stanford University School of Medicine; **P. C. Jeans,** professor of pediatrics, University of Iowa; **William Magner,** department of pathology, University of Toronto; and **A. W. Farmer,** department of surgery, University of Toronto. **Dr. H. H. Caple,** 203 Medical Dental Building, Vancouver, is receiving all inquiries regarding the clinics.

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REMITTANCES FOR DUES: CHECKS SHOULD BE MADE OUT TO DR. BENJAMIN I. GOLDEN, TREASURER, AND MAILED TO MR. RALPH E. OSBORNE, BUSINESS SECRETARY, 2543 PARKWOOD AVE., TOLEDO, OHIO.

THE TREATMENT OF PTERYGIUM

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Member of the National Academy of Medicine

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ONE of the ocular diseases known to medicine since the most remote times is pterygium. It would be almost impossible to review the entire literature on this subject, considering that in the course of the years innumerable methods of operation have been constantly accumulating for the treatment of this disease.

A pterygium consists of a triangular shaped conjunctival fold, the vertex of which invades the cornea. The base is along the bulbar conjunctiva from which it extends and with which it is confused. Its direction is always horizontal, corresponding to the portion of conjunctiva between the palpebral fissure. Usually it is found in the inner or nasal area, rarely in the external or temporal portion. Sometimes it occurs simultaneously in both areas and in both eyes. It is similar in appearance and development to a neoplasm of the conjunctiva; nevertheless, it is not a new growth, but a simple conjunctival fold attracted slowly and gradually by its vertex from the edge of the cornea towards its center, until it invades the pupillary field, adhering firmly to the corneal tissue.

It is easy to demonstrate that a pterygium is a simple conjunctival fold by inserting a catheter between it and the bulbar conjunctiva, both from above and below, this catheter coming in contact with the bottom of the sac which forms the fold. Moreover, because of its elasticity, the pterygium, if carefully detached from the cornea, tends to resume its normal position before advancement.

A pterygium can be differentiated into a vertex or head, a base or body, and a neck, which is the portion that unites the other two parts at the sclerocorneal limbus. For a better comprehension of the operative technic to be described in this paper, it would be well to differentiate two other elements: one the foot, or pedicle, that is to say, the portion of conjunctiva adhering to the ocular globe extending between the two lower portions of the sac which forms the conjunctival fold; and the fatty cushion formed by the episcleral tissue which is hypertrophied and supercharged with fatty cells and elastic fibers (fig. 1). Normally this tissue is constituted of loose cellular tissue, but once degeneration begins, fatty cells invade the entire body of the pterygium. This detail must be borne in mind during extirpation. In operating the pterygium usually is dissected and extirpated completely, with removal of a great part of the conjunctiva, and but a minimum of the fatty cushion, a large area of the sclera remaining exposed. It is easy to remove the head of the pterygium and leave the foot intact, the result being a very small loss of conjunctival tissue (fig. 2).

By studying the case with a slit lamp one can determine whether Bowman's membrane or the tissue of the cornea itself has been invaded. The most favorable cases are those in which the process has not invaded Bowman's membrane, a condition found in recent cases in the form of benign evolution; but in old cases, such as malignant ones, or those

in which the pterygium has had an excessive development, as a general rule, the corneal tissue is involved.

Another important anatomic fact is that the dissection should be from the periphery towards the center. This detail has given rise to special methods which will be treated in the course of the article.

ETIOLOGY

Very little is known of the etiology of pterygium. According to Horner, Fuchs, Zehender and other opthalmologists, it originates in the pinguecula. Degeneration of the conjunctiva produces a fatty infiltration of the intimate structure of this membrane and the membrane under it (the episcleral tissue), this degeneration resulting in a certain degree of mobility of the conjunctiva. In the pinguecula there is, in addition, new formation of elastic tissue, which shrinks the conjunctiva; when the tissue invades the sclerocorneal limbus it is easy to explain, up to a certain point, the retraction suffered by the conjunctiva and the formation of the fold of membrane which constitutes the pterygium.

However, recent biomicroscopic studies made by Coby and Galemaerts have demonstrated that the pinguecula is a senile degeneration of the conjunctiva and that it exists constantly in persons of advanced age. Therefore, the frequency of pinguecula does not correspond to that of the pterygium. On the other hand, there are other factors which contribute to its formation, such as powder, smoke and irritating gases, intense sunlight or other light, heat, etc. Its occurrence is exceptional in persons not exposed to one or more of these irritants. Pterygium frequently is found among the wealthy and, what is more curious, these cases have the characteristics of a hereditary disease.

Among the causes given have been slight trauma of the margin of the cornea which would incite the incursion of vessels in the conjunctival tissue of the cornea. Furthermore, this theory has been somewhat confirmed by the presence in the cornea of multiple small marginal ulcerations seen only by means of the slit lamp.

The vascular theory of pterygium formation is of great importance and has inspired a number of operative technics and therapeutic measures which usually give good results. One of the most ardent defenders of this theory is Prof. Obarrio of Panama, who has made a careful study of the vessels of the pterygium. According to this author, if the vessels end by forming loops after extirpation, the pterygium does not recur, but if they end in brush form which is directed towards the cornea, their recurrence is almost certain. To avoid it he advises cauterization, repeated until the desired modification in the vessels is obtained.

Terson attributes great importance to the pinching of the conjunctiva which determines the formation of the pinguecula.

In truth, the etiology is obscure and in certain cases one might invoke one or more of the causes mentioned. It is also necessary to cite other more obscure causes, such as alcoholism, hot climates, neurotrophic disturbances, etc.

TREATMENT

The treatment of the pterygium is surgical but even nowadays the results are uncertain. Analyzing, on the one hand, some of the operative methods which have been used, and on the other hand, the mistakes, faulty technic, and even the lightness with which this disease is considered, it is seen that a great number of the causes of failure reside not in the tenacity and recurrence of the condition, but in the difficulty of performing the operation in an irreproachable manner and in the belief that the thing is a simple one, whereas in reality it is not.

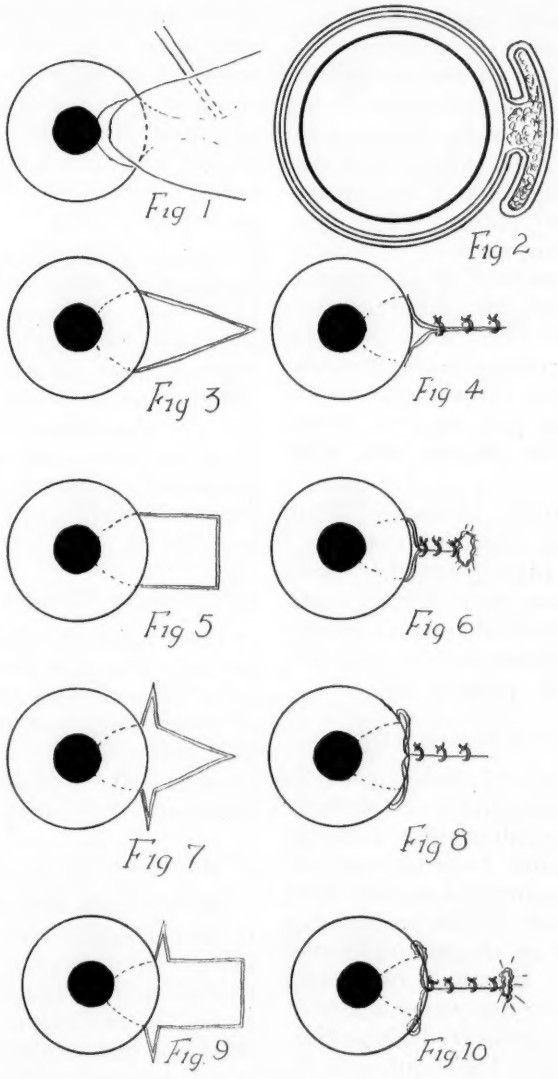


Fig. 1. Foot of pterygium indicated by the dotted lines.

Fig. 2. Foot of pterygium and the episcleral tissue filled with fatty cells.

Figs. 3 and 5. Methods by simple excision.

Figs. 4 and 6. Same procedure as in Figs. 3 and 5 with sutures.

Fig. 7-10. Methods by excision and conjunctival autoplasty by transference.

In the earlier days of medicine the treatments for pterygium were excision, cauterization and ligation, but the end result was always recurrence. Later, simple excision was complemented by suture of the wound. In 1854 Coccius pointed out the advantages of this in preventing recurrence. Then came the

third stage in which surgeons concentrated their attention on scraping and cauterizing the head of the pterygium with the thought that a great improvement had been made in the treatment of the disease. However, failures still occurred and the ingenuity of the operators was called into play to invent new methods of attaining success. Modifications were then adopted in accordance with experience and the different theories of etiology. Thus were brought into practice the procedures of inversion, pricking, deflection, transplantation, forcible separation, etc., some of which are still used at the present time with good results.

It would be tedious to review all of these technics, but they may be mentioned by groups, placing together those which have common characteristics and are essentially identical. At the same time their advantages, defects and disadvantages will be pointed out.

METHODS OF EXCISION

The methods of excision consist in extirpating the pterygium. If the body is triangular or quadrangular in form, the head is carefully loosened and resected. After scraping and cauterization of the bloody part of the cornea, the wound is sutured by simple approximation of the edges. Usually a horizontal scar remains; some uncovered areas of the sclera are left uncovered, these closing by granulation. The result is in an enlarged, irregular scar and if the excision is ample, the conjunctiva hangs over the cornea, causing recurrence or the formation of a false pterygium (figs. 3-6).

METHODS BY EXCISION AND CONJUNCTIVAL AUTOPLASTY BY TRANSFERENCE

These methods are, in principle, the same as those described above, but in order to close the wound and avoid in part irregular scars, excision of the pterygium is followed by incision and detachment of the conjunctiva, thus permitting an easier transference and the approximation of the edges by means of sutures. Some of these have the disadvantage that the remaining tissues project over the cornea, produce folds in the conjunctiva and cause horizontal scars (figs. 7-10).

One of the typical technics of this category is that described by Dr. Daniel M. Vélez, consisting in excising the pterygium in its entirety and later making an ample débridement of the conjunctiva towards the upper and lower parts of the cornea. By this ingenious detail the conjunctiva is easily freed and the portion showing loss of tissue as a result of excision of the pterygium may be covered.

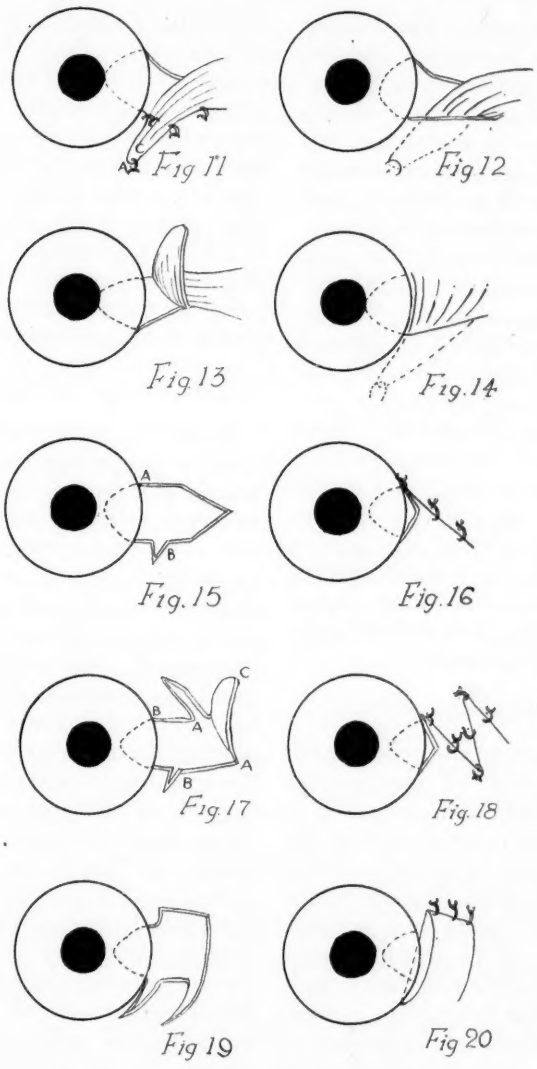
METHODS BY EXCISION AND DEFLECTION

These methods, which are more nearly perfect than any previously described, entail more autoplasty and the formation of a deflected scar with respect to the palpebral fissure. Terson, Fernando López, Uribe Trincoso, Lipscomb and others use these methods.

METHODS BY SIMPLE DEFLECTION

With simple deflection the pterygium is uprooted and transferred to another place. Desmarres was the first to put this idea into practice. He first dissected the pterygium and then placed it in a new bed on the conjunctiva; afterwards he inserted it under the conjunctiva in order to cause a definite deflection of the vessels and to provoke the atrophy of the pterygium (figs. 11 and 12).

Later MacReynolds modified this procedure, inserting only the head, without total dissection of the pterygium, which is accomplished through an incision made on the lower edge of the pterygium (figs. 13 and 14). These procedures are inspired by the preponderant rôle attributed to the blood vessels in the formation and recurrence of the pterygium.



Figs. 11-14. Methods by simple defection (Desmarres and MacReynolds).

Figs. 15-20. Methods by autoplasty of flap (Fernando López, Terson).

MacReynolds' method gives good results with respect to nonrecurrence, but the reddish and bulky appearance of the conjunctiva persists for a long time. His procedure also has the advantage of not dissecting the pterygium, a circumstance which is principally responsible for the good results obtained.

METHODS BY AUTOPLASTY OF FLAP

These procedures consist of excising the pterygium and covering the exposed area with conjunctival flaps, to meet two cardinal purposes: (1) to replace the diseased conjunctiva with normal conjunctiva, and (2) to properly place the operative scar and the direction of the

conjunctival blood vessels. The variety of these procedures is almost infinite, as an incision made farther up or farther down, a flap placed upward or downward, and differences in the shape, size and number of the incisions constitutes sufficient motive for describing a new procedure for each variation in technic. Typical methods are those of Dr. Fernando López, who makes a small triangular flap, thereby obtaining an oblique and lineal scar (figs. 15-18) and of Dr. Terson, who makes a rectangular flap which descends and covers the conjunctival breach (figs. 19 and 20). Some of the procedures of this category have the great defect of making too ample dissections of the conjunctiva, the resulting flaps hanging over the cornea and covering its bleeding portion, thus leading to recurrence. Another objection to these procedures is the difficulty of their complicated technics.

METHODS OF TRANSPLANTATION

These methods consist in replacing the pterygium by a piece of conjunctiva taken from the unaffected eye, if it is healthy, or from the healthy part of the diseased eye. Instead of a conjunctival graft a portion of labial mucous membrane or even a bit of skin may be used. These procedures can be recommended only in the almost irreparable cases, such as those in which the pterygium is complicated by symblepharon, atrophy of the conjunctiva or marked retraction of the tissues and with immobility of the ocular globe, a frequent sequela in cases of pterygium which have been operated upon and have recurred several times.

METHODS BY FORCIBLE SEPARATION

These do not exactly constitute a group of procedures but rather of variations employed by operators. Attention is called to the manner in which some operators separate the head from the remainder of the pterygium; that is to say, they make a real extirpation, proceeding from the periphery towards the center. For this some use a squint hook; and Prince, Webster, Fox and others accomplish this by means of sutures previously placed in the body of the pterygium. In this group are those operators who dissect it from the periphery towards the center. The extirpation is easy and almost never is a residue of the pterygium left in the cornea. Operating from the periphery towards the center has an anatomical foundation.

DEFECTS AND MISTAKES IN TECHNIC

From the foregoing enumeration of some of the principal operative methods, it will be seen that defects and mistakes in technic abound and among them are: too wide dissection of the conjunctiva, especially if this is made in the sclerocorneal limbus itself which makes autoplasty at a later date difficult and predisposes the conjunctiva to project over the cornea; the development of horizontal scars and of folds produced by granulation tissue abundant proliferation of the vascular tissue; the persistence of the hypertrophied episcleral tissue which raises the conjunctiva and makes it more bulky, so that it is easily moved and folded by the eyelids; failure to dissect carefully the head of the pterygium, which may have left residue of the cornea; the exaggerated scraping of the bleeding surface of the cornea or the cauterization which is made to destroy the rest of the pterygium, both of which only provoke an extensive and profound loss of substance and the destruction of Bowman's membrane, giving rise to a scar which will fill the breach with granulation tissue and which will cause recurrence. Finally, the tearing of the flaps, the imperfection of the operation and some other defects of less importance must be taken into consideration. All represent a very important contingent in the recurrence of the disease, which usually is attributed to its tenacity. However, an operation performed care-

fully with some of the procedures herein mentioned, the operator being guided strictly by the exact details of the operative technic, is likely to give excellent results. Otherwise it is hard to explain the fact that they are recommended and used by their respective authors.

STANDARD OF OPERATIVE TREATMENT

After the defects have been pointed out, it is fitting to indicate the standard by which operative methods should be governed. For all practical purposes they may be reduced to three:

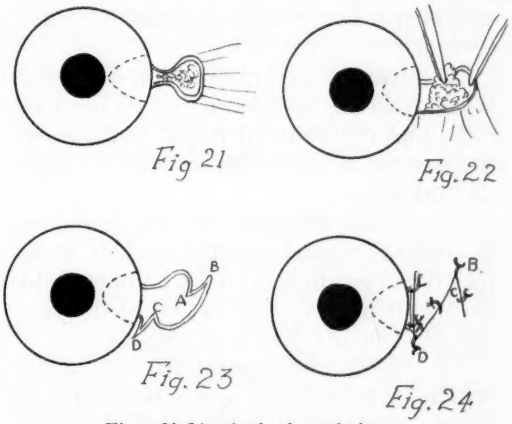
1. Careful dissection of the head of the pterygium from the periphery to the center of the cornea, respecting Bowman's membrane and the corneal tissue.
2. Respect for the pedicle of the pterygium and avoidance as nearly as possible of the dissection of the pterygium itself, with ample excision and dissection of the conjunctiva.
3. The making of an exact autoplasty without stretching, projection of the conjunctiva over the cornea being avoided and an attempt being made at the same time to obtain a scar remote from the palpebral slit, in order that the blood vessels may be properly directed.

The author's method which is described below has given good results. It is a selection of elements and details taken from various procedures.

AUTHOR'S TECHNIC

Anesthesia is induced by instillation of a solution of cocaine with the addition of 5 per cent adrenalin and the injection of a small amount of novocaine into the body of the pterygium.

The head of the pterygium is grasped with a forceps with light traction. A cataract knife is inserted under the pterygium towards the limbus, and with the back of the knife the dissection is made slowly from the periphery towards the center, the operator taking care not to leave any residue over the cornea. If the dissection has been done well, a smooth surface slightly brilliant, mirror-like and transparent, will remain, corresponding to the external layer of the cornea. To make this dissection accurately it is well to use a binocular loupe.



Figs. 21-24. Author's technic.

Once the pterygium is dissected, it is grasped by the vertex with a fine forceps and the portion corresponding to the head is cut with a small scissors, care being taken to make the cut in a direction perpendicular to the fold. The result is in an oval-shaped loss of substance, whose greatest diameter is vertical (fig. 21).

The remainder of the pterygium is grasped at the edge of the wound with a forceps and is brought towards the palpebral commissure, in which position it is maintained by the assistant. Meanwhile the operator removes the body of the pterygium from the hypertrophied episcleral tissue, exercising care not to tear the conjunctiva, either at the foot or at the fold portion corresponding to the body. It is surprising at times to see the quantity of fatty tissue which must be removed to leave the sclera clean and to note how the conjunctiva, which forms the body of the pterygium, as-

sumes a form similar to that of the healthy conjunctiva.

After performing this part of the operation, an incision is made on the portion of the conjunctiva farthest from the limbus (*A-B*, fig. 23). Another incision (*C-D*, fig. 23) of the same size and in a direction opposite to that of the former, 2 mm. from the limbus, is made. The result is two small flaps opposed by their vertex.

By means of a suture the end of flap *A* is taken to the bottom of the incision in *C-D*, and the point of flap *C* is taken to the bottom *B* of the incision *A-B* (figs. 23 and 24).

From this removal of the flaps an N-shaped wound results; a scar completely perpendicular to the palpebral slit forms, provoking a diversion of the vessels also in this direction (fig. 24).

To finish the operation, as many stitches will be taken as are necessary to obtain the correct support of the flaps and to avoid their projection. A stitch should systematically be applied between the portion adhering to the limbus and the diverted flaps (fig. 24).

In the technic just described two principal details stand out: The first is the necessity of respecting the foot of the pterygium, too wide dissection of the conjunctiva being thus avoided; the second is the necessity for removing the episcleral tissue so that the conjunctiva is permitted to return to its normal relations with the sclera, to which it adheres, and this, in turn, prevents it from being pinched and traumatized by winking.

The results obtained with this procedure are satisfactory, although there have been some recurrences. Precautions are less necessary with this procedure than with many others and the slight mobility of the conjunctiva over the cornea does not make the use of a binocular bandage indispensable as in the other classical procedures.

In addition to these operative methods, the author has used several physical agents for the treatment of pterygium, among them diathermocoagulation and roentgenology.

The action of diathermocoagulation, despite its penetrating, modifying and sterlizing effect, acts as a simple burn, and no matter how completely it is done, it leaves elements in the cornea sufficient to provoke its recurrence. If some authors have been satisfied with the procedure, it is probable that their conclusions in most cases have been premature and that they have published them only because of their enthusiasm over the immediate results.

Roentgen rays are not capable of destroying a pterygium as they destroy a neoplasm, but they can convert a progressive pterygium into a stationary one, making it thinner, more pallid and poorly vascularized and therefore, more easily tolerated by the patient. A series of postoperative irradiations was given by the author in those cases in which a tendency towards reproduction was noticed.

SUMMARY

The etiology of pterygium is obscure. It is probably caused by one or more of the following factors: degeneration of the conjunctiva with simultaneous formation of elastic tissue in the pinguecula; powder, smoke and irritating gases; intense light or heat; and trauma. The author's technic of operation, herein described, is a combination of what he considers the important elements of operations commonly practiced for this condition. Results obtained with his procedure have been satisfactory, although there have been some recurrences. However, fewer precautions are necessary with this method than with many others.

RÉSUMÉ

Le traitement du ptérygion

L'étiologie de cette affection est obscure. Parmi les facteurs étiologiques on peut citer: dégénération de la con-

junctive avec formation simultanée de tissu élastique dans la pinguécule; poudre, fumée, gaz irritants; lumière intense et grande chaleur; traumstisme. L'auteur décrit en détail la technique de son operation. Ses resultats furet satisfaisants, quoiqu'il eût quelques récidives. Neanmois, moins de precautions sont nécessaires avec sa méthode qu'avec les autres méthodes.

ZUSAMMENFASSUNG

Die Behandlung des Pterygium

Die Atiologie des Pterygium ist noch dunkel. Es wird wahrscheinlich durch einen oder mehrere der folgenden Faktoren hervorgerufen: Degeneration der Conjunctiva mit gleichzeitiger Bildung elastischen Gewebes in der Pinguecula, Staub, Rauch und reizende Gase, starkes Licht, Hitze und Trauma. Die Operationstechnik des Autors ist eine Kombination aus den wichtigsten Teilen der verschiedenen Methoden die bisher gebraucht wurden. Die Resultate mit dieser Methode waren zufriedenstellend obgleich einige Rezidive vorkamen. Mit dieser Methode ist weniger Vorsicht nötig als mit vielen anderen.

SUMARIO

El tratamiento del terigeon

La etiología del terigeon es obsecura. Este es probablemente causado por uno ó mas de los factores siguientes: degeneración de la conjunctiva con la formación simultanea de tejido elastico en la pinguecula; polvo, humo y gases irritantes; luz intensa y calor; y traumatismo. La técnica de operación del autor, descrita aqui, es una combinación de lo que el considera los elementos importantes de operaciones comunmente practicadas por esta operación. Los resultados obtenidos con este precedimiento han sido satisfactorios, aunque hallan habido algunas recurrencias. De cualquier modo las precauciones son menos con este metodo que con cualquiera de los otros.

RIASSUNTO

La cura del pterigio

La etiologia del pterigio è oscura. Probabilmente è causata da uno o più dei seguenti fattori: degenerazione della congiuntiva colla formazione, simultaneamente, dei tessuti elastici nella pinguecula; polvere, fume e gassi irritanti; luce o calore intenso; e trauma. Il tecnico dell' autore, qui descritto, è, egli considera, una combinazione di tutti gli elementi importanti delle operazioni ordinariamente praticate per questa condizione. I risultati ottenuti con il suo procedimento sono soddisfacenti, benchè ci sono stati dei ricorrimenti. Tuttavia, meno precauzioni sono necessarie con questo metodo che con molti altri.

APPLICATIONS FOR SCIENTIFIC EXHIBITS FOR ASSEMBLIES SHOULD BE ADDRESSED TO DR. CHARLES H. ARNOLD, SUITE 903, 94 O ST., LINCOLN, NEBRASKA

ACIDOSIS IN SURGERY

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THE maintenance of the normal hydrogen ion concentration of the blood is of greatest importance. Judged by its volumetric value, blood plasma is strongly alkaline, although the *p*H is 7.38; but the ionic reaction by electrometric methods reveals it to be only slightly alkaline and almost neutral.

The discrepancy between these two tests is due to two causes: (1) the presence of buffer salts, consisting of H and OH ions, which may be supplied according to the needs of the organism to neutralize excessive acids or bases in the blood; (2) the resistance of the blood to changes in reaction, in addition to hydroxyl ions, which makes it capable of neutralizing acids, this being the mechanism whereby the organism defends itself from the invasion of acid products of metalbolism.

The ionic and osmotic equilibrium of the plasma is maintained by carbonic acid, a weak and volatile acid which can easily be eliminated through the lungs. It is formed from the products of organic combustion, the resulting CO_2 being dissolved in the form of H_2CO_3.

The quantity of CO_2 in the blood is an indicator of the fixed acids contained in the blood, just as the tension in the pulmonary circulation indicates the CO_2 tension of the alveolar air. A decrease in the alveolar carbon dioxide combining power indicates an alteration in the hydrogen ion equilibrium or the presence of acids in the blood, and inversely, an increase of the alveolar CO_2 indicates a reduction of the fixed acids of the blood.

The acidity of the blood depends on its capacity to combine with CO_2. When this capacity is reduced by the presence of acid products of metabolism to a point at which the acid products exceed the alkali reserve, acidosis results. On the other hand, when the balance between the alveolar CO_2 and the combined CO_2 of the blood is constant, there results only a reduction of the alkali reserve of the blood. The acidosis would be uncompensated if a real increase in the H ions occurred, a result which would follow the formation of acids in abundance; this is observed only in the moments preceding death.

The principal buffers are bicarbonate of soda, mono and dibasic phosphates, proteins and hemoglobin.

When the bicarbonate concentration of the blood is lowered, it is supposed that the alkali concentration is also lowered. This alkali reserve is in direct ratio to the bicarbonate contents and is always reduced in the presence of abnormal metabolic processes, as in diabetes, when organic acids are in excessive quantity. For the maintenance of the normal *p*H of the blood it is necessary that the reduction of the alkali reserve be balanced with the equivalent lessening of the CO_2 tension.

An aid in this regulatory process is the respiratory system. The respiratory center is a regulator of the circulatory-pulmonary equilibrium and for that reason of the acid-base equilibrium of the blood, according to the theories of Winterstein and Haldane.

The kidney, which eliminates urine whether it is acid or alkaline and in this way subtracts from the organism the acid or alkaline valencies, also assists in maintaining a constant acid-base equilibrium. When the kidney does not func-

tion normally, elimination may be so reduced that the constancy of the reaction of the blood cannot be maintained. This may occur when the kidney is diseased.

The liver supplies ammonia to saturate the accumulating acids and reduces in proportion the production of urea, as is observed by the increased elimination of ammonia in the urine and the lessening of the urea. This organ, then, serves as a regulator of the acid-base equilibrium.

The capillary endothelium permits the interchange of alkali between the blood and the tissues. Other excretary organs, such as the intestine and sudoriferous glands, assist in regulating the balance between alkalies and acids, the diarrhea and profuse sweating observed in cases of acidosis being instances of the operation of this mechanism.

An analytical study of the different factors which control acidity and alkalinity is necessary for the determination of the *p*H of the blood. These consist in: (1) a study of the lowering of the alkaline reserve with the Van Slyke apparatus; (2) a measure of the lowering of the CO_2 tension of the alveolar air which indicates the lowering of the tension of this gas in the blood; (3) tests for acetone, acetic acid and beta-oxybutyric acid in the urine; (4) Sellard's test of the tolerance to sodium bicarbonate.

Normally in the adult the quantity of CO_2 in the blood plasma is equivalent to 55 volumes per hundred. When the capacity of the CO_2 is reduced below 55 volumes, acidosis is said to exist. Myers measures the degree of acidosis according to the alveolar tension of the CO_2. When it varies from 52 to 40, he designates the condition as latent acidosis; from 40 to 31, as manifest acidosis; and when it falls below 31 (16 being the lowest tension observed which was not followed by death) he calls it grave acidosis.

In the valley of Mexico the figures are lower than those found at sea level, without acidosis being present, according to Manzanilla. The difference in clinically normal individuals is approximately 10 volumes per hundred lower than the average at sea level. This is due largely to the total atmospheric pressure which is 585 mm. instead of 760 mm.

The circulation of the blood is a protection against acidosis. When the arterial blood pressure is very low, the volume of blood sent to the tissues at a certain time may be greatly reduced and therefore the quantity of oxygen received by the tissues will also be reduced. Muscular or intellectual fatigue, the breathing of vitiated air, exhaustion, etc., will result in the production of lactic acid instead of carbonic acid as a metabolic product of the tissues, and the lactic acid, which is nonvolatile, cannot be eliminated through the respiratory tract. Its accumulation and the formation of sodium lactate in the plasma instead of sodium bicarbonate give rise to the development of acidosis.

ACIDOSIS IN SURGERY

Acidosis occurs fairly frequently in surgery, making its appearance usually during the postoperative period. In the preparation of the patient for operation and in the preoperative care, the causes of acidosis should be anticipated and prevented, if possible. The emotional factor must be considered in preoperative care because psychic exhaustion may produce acidosis just as physical exhaustion causes it. Crile has given a masterly description of the manner in which this force operates. The best way to overcome it is to win the complete confidence of the patient.

Kidney and liver function tests should be made to assure the elimination of toxic substances. Normal bowel movements should be established before the operation and a lacto-vegetarian diet, rich in carbohydrates and abundant in beverages, should be prescribed. The

coagulation time of the blood, the blood urea, the leucocyte count and the blood pressure should all be tested carefully. Light narcotics given before the operation assist in allaying the patient's fears.

Chilling or traumatism to the tissues or viscera during the operation may produce acidosis, as will also hemorrhage with secondary anemia and the lessening of the blood volume.

One of the principal causes of acidosis in surgery is the anesthetic, especially chloroform. Ether decreases the alkaline reserve and provokes a lowering of the blood pressure, according to Cannon; Dale has shown that ether provokes alterations of the capillary walls which make them more permeable, permitting the flow of plasma into the interstitial spaces, and this, in turn, lessens the blood volume, a decrease in blood pressure and other previously described sequelae occurring. Gramen found that local anesthesia can also produce this condition. In spinal anesthesia the presence of acetone in the urine has been found in 40 per cent of the cases, but real acidosis has not been demonstrated. With sodium pentothal a transitory lowering of the arterial blood pressure is observed. Undoubtedly the best anesthetic is one consisting of a mixture of different gases. Balsoforme is an inhalant anesthetic that we frequently employ and with which we have observed only a slight transitory lowering of the blood pressure.

Postoperative treatment should include rest and isolation and the avoidance of chills. Opium and its derivatives are to be administered according to the needs of the patient. Abundant liquids should be given by enteroclysis, hypodermoclysis or by mouth. Infection is an important factor in acidosis and should be guarded against.

SYMPTOMS OF ACIDOSIS

If, despite precautions, acidosis should develop, its clinical manifestations appear usually from the second to the third day. The prodromal symptoms are instability, insomnia and slight dyspnea, followed by hyperpnea without cyanosis, bilious vomiting (never dark), depression and apathy, cephalalgia, lowering of the arterial pressure, rapid pulse (120 to 150 or more), cold sweats, cyanosis and chilling of the extremities. The face may present a peritoneal facies, with sunken eyes and dry, red tongue and gums. The breath may have an acetone odor. The abdomen is always painless and soft, exhibiting a condition intermediary between that in which pathology is present and that in which symptoms are absent. The urine contains albumin and casts, and perhaps acetone, diacetic and beta-oxybutyric acids. The absence of these ketonic acids in the urine does not preclude the diagnosis of acidosis.

DIFFERENTIAL DIAGNOSIS

Among the postoperative syndromes to be considered in the differential diagnosis of acidosis are acute peritonitis, intestinal obstruction, paralytic ileus and acute gastric dilatation. In each of these four conditions local symptoms, such as tympanites and rigidity, are present; vomiting is bilious at first, but the vomitus soon becomes dark or green in color. These symptoms are not present in acidosis.

In alkalosis there are always painful muscular contractions, with acid and dark colored vomitus, dry skin and meteorism, without rigidity. These symptoms are not found in acidosis.

In hepatic disease, acute nephritis and uremia, clear and precise symptoms are usually present, corresponding to the pathologic entity which they accompany. Laboratory findings, however, are more than sufficient to make the differential diagnosis.

TREATMENT

The treatment consists essentially in the administration of fluids charged with

glucose, parenterally, intravenously, or by enteroclysis or hypodermoclysis. Insulin, alkalies in the form of sodium bicarbonate and sodium citrate and blood transfusions are of great benefit.

SUMMARY

The chemical and physiological factors which produce acidosis are described. Acidosis occurs usually when the carbon dioxide in the blood plasma is reduced below 55 volumes per hundred. In Mexico, however, the normal condition is approximately 10 volumes lower than the average at sea level. An aid to the prevention of acidosis in surgery is a favorable mental attitude on the part of the patient. Thorough laboratory tests, including kidney and liver function tests, avoidance of chilling and traumatism during the operation and the choice of the proper anesthetic are essentials. Surgical acidosis must be differentiated from acute peritonitis, intestinal obstruction, paralytic ileus and gastric dilatation. Treatment consists in the administration of fluids with glucose, insulin, alkalies and blood transfusions.

RÉSUMÉ

l'Acidose en chirurgie

Les facteurs chimiques et physiologiques déterminant acidose sont étudiés. L'acidose survient généralement quand le dioxide de carbone dans le plasma du sang est réduit en dessous de 55 volumes pour cent. A Mexico, la condition normale est approximativement 10 volumes en dessous de la moyenne au niveau de la mer. Une attitude mentale favorable de la part du malade aide à prévenir l'acidose, d'autres facteurs prophylactiques sont les épreuves fonctionnels du foie et des reins, protéction du malade contre de refroidissement, le minimum de traumatisme dans le cours de l'acte opératoire, le choix heureux de l'anesthésique. Ne pas confrondre l'acidose avec la péritonite aiguë, l'obstruction intestinale, l'iléus paralytique et la dilatation gastrique. Pour le traitement avoir resours à la glucose, à l'insuline, aux alkalins et aux transfusions sanguines.

ZUSAMMENFASSUNG

Acidose in Chirurgie

Die chemisch-physiologischen Faktoren, die Acidose hervorrufen sind beschrieben. Acidose tritt gewöhnlich auf wenn Kohlendioxyd in Blutplasma unter 55% reduziert ist. In Mexico allerdings ist der Kohlendioxydspiegel 10% tiefer als am Meeresspiegel. Eine Hilfe in der Verhütung der Acidose ist eine günstige geistige Einstellung des Patienten, sorgfältige Laboratoriumsuntersuchungen, einschliesslich Nieren- und Leberfunktionsprüfung; Verhütung von Schüttelfrost und Traumatisation während der Operation und die Wahl des entsprechenden Narkosemittles. Chirurgische Acidose muss von acuter Peritonitis, Darmverschluss, paralytischem Ileus und Magenerweiterung unterschieden werden. Die Behandlung besteht in Flüssigkeitszufuhr mit Zucker, Insulin, Basen und Transfusionen.

SUMARIO

Acidosis en cirugía

Los fenomeno químico y fisiológico que produce acidosis son descritos. Acidosis ocurre genaralmente cuando el anhidrido carbónico en el plasma sanguineo es reducido bajo 55 volumenes por ciento. En Méjico la condición normal es aproximadamente 10 volumenes mas bajo que el promedio al nivel del mar. La ayuda á la prevención de la acidosis en cirugía es una actitud mental favorable en parte del paciente; exámen de laboratorio completo, incluyendo pruebas funcionales de los riñones é higado; evitar la exposición al frio y traumatismos durante la operación; y escoger la anestesia apropiada. Acidosis quirúrgica debe de

diferenciarse de peritonitis agúda, obstrucción intestinal, ilio paralítico y dilatación gástrica. El tratamiento consiste en la administración de fluidos con glucosa, insulina, alcalinos y transfusión de sangre.

RIASSUNTO

L'Acidosi nella chirurgia

I fattori chimichi e fisiologici che producono l'acidosi sono descritti. L'acidosi occorre generalmente quando il biossido di carbonio nel plasma sanguigno è ridotto a meno di 55 volumes per cento. Nel Messico, tuttavia, la condizione normale è, per approssimazione, 10 volumi più bassa che la media al livello del mare. Aiuti per prevenire l'acidosi nella chirurgia sono una disposizione di mente favorevole nell'ammalato; prove complete di laboratorio, comprendendo prove di funzione di rene e di fegato; evitazione di raffreddamento subitaneo e traumatismo durante l'operazione; e la scelta dell'anesteticocorretto. Si deve differenziare l'acidosi chirurgica dalla peritonite acuta, dall'ostruzione intestinale, ileo paralitico e dilatazione gastrica. Il trattamento consiste nella somministrazione di liquidi con glucosio, insulina, alcali e di trasfusioni di sangue.

Dr. William D. Haggard, of Palm Beach, Florida, died January 28 at the age of 67 years. He was past president of the American Medical Association and of the American College of Surgeons. At one time he was professor of surgery and clinical surgery at Vanderbilt University.

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Revista Mexicana Medicina dedicated its January 10 number to the Mexican chapter of the International College of Surgeons.

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Revista Mexicana Pasteur dedicated its February number to the Mexican chapter of the International College of Surgeons.

Dr. Werner Spalteholz, Dr. Med. and LL.D., professor of anatomy at the University of Leipzig, died January 12.

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Dr. René J. Dubos, of the Rockefeller Institute for Medical Research, was presented with the John Phillips Memorial Award for meritorious work in internal medicine at the annual congress of the American College of Physicians, which opened at Cleveland on April 1.

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Sir Robert Hutchison was reelected president of the Royal College of Physicians, London, on March 18.

THE NEXT INTERNATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD IN MEXICO CITY, MEXICO, AUGUST 10-14, 1941.

ANESTHESIA OF THE PHARYNGEAL TONSILS THROUGH THE NASAL CAVITIES

FEDERICO J. MOLAS OLIVERAS, M.D., F.I.C.S.

MEXICO CITY, MEXICO

IN the removal of pharyngeal tonsils, the choice of anesthetic is very important. Some surgeons resort to a general anesthetic despite the occasional bad results from its use in this simple procedure. Relaxation and bleeding are the disagreeable accompaniments of general anesthesia in this operation.

Some surgeons operate in these conditions without an anesthetic, but it is unpleasant to contemplate such a procedure because of the struggle which ensues between the surgeon and the patient. Loss of confidence is the inevitable result. Cocaine anesthesia offers disadvantages if it is administered through the oral cavity, or by means of insufflations through the nasal chambers, in an attempt to obtain anesthesia by the small amount of anesthetic which reaches the nasopharynx.

The simplicity and efficacy of my own technic at the hands of the specialist and general surgeon for removing pharyngeal tonsils follows:

A probe or cotton applicator, of the kind used by the otolaryngologist, is bent slightly to obtain the curvature of an Ytard's probe; the bent end is wrapped with cotton and dipped in a solution of cocaine (10 per cent), novocaine, pantocaine or other anesthetizing solution. The probe is introduced into the widest portion of one of the nasal cavities, determined previously by rhinoscopy. Patience must, of course, be exercised with children. The patient or the assistant is asked to hold the probe in position, moving it slightly to and fro in order to reach the areas to be anesthetized. This procedure is carried out twice, fresh cotton and additional solution being used.

This method offers sufficient anesthesia for the performance of the operation and contributes to the confidence of the patient and his parents. Experience has shown that the operation can be more easily and safely performed than by simple digital exploration of the nasopharynx. Hemorrhage is negligible.

SUMMARY

The author obtains anesthesia of the pharyngeal tonsils by introducing the anesthetic solution into the widest portion of one of the nasal chambers on a probe, one end of which has been wrapped with cotton.

RÉSUMÉ

Anesthésie des amygdales pharyngiennes par la voie nasale

L'auteur obtient l'anesthesie des amygdales par l'introduction dans la partie la plus large d'une des cavités nasales, d'une sonde dont une des extrémités est entourée de coton imbibé de la solution anesthésique.

ZUSAMMENFASSUNG

Anästhesie der Rachenmandeln durch die Nasenhöhle

Der Autor erhält eine gute Anästhesie der Rachenmandeln durch Einführung des Anästhesiemittels durch den weitesten Teil einer der Nasenhöhlen. Die Einführung geschieht mit einer Sonde an derem Ende etwas Watte befestigt ist.

SUMARIO

Anestesia de las amigdales faringeales á travez de la nariz

El autor obtiene anestesia de las amigdalas faringeales introduciendo en la porcion mas ancha de las cavidades nasales una sonda, uno de cuyos extremos se ha envuelto con algodon y ha sido sumergido en una solución anestésica.

RIASSUNTO

Anestesia delle tonsille faringee

L'autore ottiene l'anestesia delle tonsille faringee coll'introduzione di una sonda che contiene sulla punta un poco di cotone bagnato colla soluzione anestetica nella parte piu large di una delle cavita nasali.

NATIONAL GASTROENTEROLOGICAL ASSOCIATION

THE fifth annual convention of the National Gastroenterological Association will be held June 4, 5 and 6 at the Hotel Roosevelt, New York City. Members of the executive board will take turns in presiding over the scientific sessions.

Dr. Anthony Bassler, of New York, is president; Dr. Horace W. Soper, of St. Louis, first vice-president; Dr. C. J. Tidmarsh, of Montreal, second vice-president; Dr. Felix Cunha, San Francisco, third vice-president; Dr. Roy Upham, New York, secretary-general.

Papers will be presented by Drs. W. Wayne Babcock, of Philadelphia; Chester S. Keefer, of Boston; Max Einhorn, of New York; Stanley P. Reimann, of Philadelphia; A. L. Levin, of New Orleans; J. Louis Ransohoff, of Cincinnati; Robert Zollinger, of Boston; J. S. Diamond, S. A. Siegel and S. Myerson, of New York; Richard B. Cattell, of Boston; Charles A. Doan, Philip T. Knies and Clark P. Pritchett, of Columbus, Ohio; Willard D. Mayer, of Detroit; I. R. Jankelson and Charles W. McClure, of Boston; Boris P. Babkin, of Montreal; G. M. Russell, of Billings, Mont.; J. D. Adamson, of Winnipeg, Canada; J. Harvey Black, of Dallas, Texas; Horace W. Soper, of St. Louis; Isidore Cohn, of New Orleans; Anthony Bassler, of New York; Tate Miller, of Dallas, Texas; and Harry P. Smith, of Iowa City, Iowa.

Round table conferences will be held during the luncheon hour each day.

Dr. Henry Kendall, of New York, is chairman of the program committee.

Sir Humphry Rolleston has been admitted to honorary fellowship in the Royal College of Surgeons, London. Since 1924 he has been chairman of the executive committee of the Imperial Cancer Research Fund.

Dr. André Gratia, professor of bacteriology at Liège University, has been awarded the Helme Prize by the Académie de Médecine, Paris, for his work on bacteriophages.

PRETHORACIC ESOPHAGOPLASTY

ABRAHAM AYALA GONZALEZ, M.D., F.I.C.S.

Member of the Mexican Academy of Surgery
President of the Mexican Society of Gastroenterology

MEXICO CITY, MEXICO

IN 1929 I published my first report of a case in which esophagoplasty was performed.[1] The patient (Mrs. A. O.) was treated on my service (General Hospital, Ward 19). The series of operations was performed by Dr. Dario Fernandez and me. Some time ago I had the opportunity to examine this patient and found the esophagus to be functioning well.

The following report is an observation of a girl (E. P.) who was admitted to Ward 24 of the General Hospital, Mexico City, on June 16, 1938, complaining of dysphagia so marked that she could scarcely ingest liquids.

Seven months previously (Dec. 7, 1937) the patient swallowed a small amount of a concentrated solution of lye; this was followed immediately by intense retrosternal pain and regurgitation of bloody mucus mixed with small amounts of buccal and esophageal mucosa. Soon after the accident aphagia, with total inability to ingest food of any kind, appeared, lasting, however, but a few days. Improvement was gradual and within a short time normal function of the esophagus had returned. The recovery was transitory; a month after the ingestion of the lye dysphagia again manifested itself and progressed to the point where she could take only liquids, and at times even liquids could not be swallowed. During this period she had lost 23 Kg. in weight.

Marked pallor was present. Other organs were found to be normal. Roentgenograms showed stricture of the esophagus at the upper portion of the sternum. The barium, most of which was regurgitated, appeared like a thread in the roentgenogram. The suprastrictural dilatation was moderate.

With the use of the esophagoscope an attempt was made to pass some fine bougies in order to prepare for electrolysis, a method of treatment which I usually employ when the stenosis is not overcome by the insertion of dilators. Several attempts to pass the bougies failed. This, coupled with the fact that the patient was poorly nourished, made it necessary to resort to surgery. It was realized that gastrostomy, at least, must be performed; encouraged by the good results obtained with the previously mentioned patient (Mrs. A. O.), a more radical operation was decided upon after the patient had been told of the possible danger to which she might be subjected.

The first stage of the operation was performed July 2, 1938, under spinal anesthesia, Dr. Mario Quinones assisting. No primary gastrostomy was performed.

A midline supraumbilical laparotomy was made as far as the xiphoid process. About 40 cm. from the duodenojejunal angle a transverse section of the intestine was made. The proximal end was closed with a purse-string suture, a portion of the catgut suture being left long to be used later for traction. Two vascular arches were sectioned, an attempt being made to preserve as much mesentery as possible with the loop. Care was taken that the most distal portion of the mesentery (the portion included in the purse-string) conserved its vitality, a condition most essential for good operative results. It was estimated that the extremity of this distal loop would reach the level of the fourth left intercostal space, close to the midline. A side-to-side anastomosis was done between the stomach and the jejunum (figs. 1 and 2); the loop was then removed from the abdomen and passed through a subcutaneous tunnel, beginning in the epigastrium and extending as far as the fourth intercostal space, where it was fixed in a circular manner through an opening of the skin.

The continuity of the digestive tube was preserved by performing a side-to-end anastomosis between the proximal loop and the jejunum below the gastroduodenal anastomosis previously made. The abdominal wall was closed carefully in order not to strangulate the intestinal loop transplanted to the thorax.

The following day the purse-string suture placed in the prethoracic region was opened in order to feed the patient. The patient's progress was uneventful. The transplanted loop remained viable.

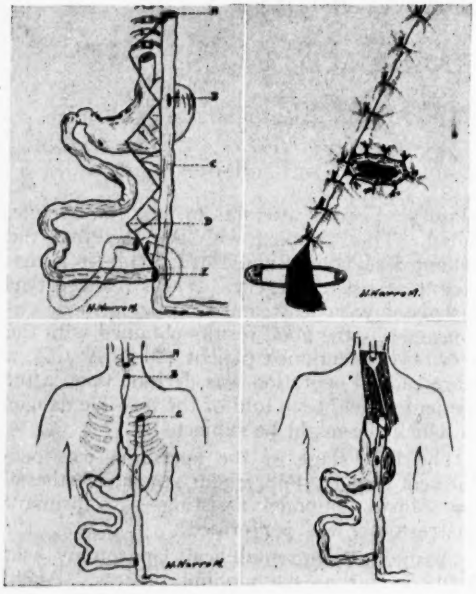


Fig. 1. Upper Left. *A*, Jejunum placed at the level of the fourth intercostal space. *B*, Gastrojejunal anastomosis. *C*, Jejunum. *D*, Vascular arches sectioned. *E*, End-to-side anastomosis.

Fig. 2. Lower Left. *A*, Cervical esophagus sectioned. *B*, Distal end of the stenosed esophagus. *C*, Jejunum sutured to the skin.

Fig. 3. Upper Right. Suturing of proximal portion of esophagus to skin of neck 3 or 4 fingerbreadths from the clavicle.

Fig. 4. Lower Right. Plastic operation of skin to form the tunnel between the cervical esophagus and the prethoracic jejunum.

On August 5, 1938, the second stage of the operation was performed. Under general anesthesia a left lateral incision was made along the sternocleidomastoid muscle; dissection proceeded by layers until the middle cervical fascia and omohyoid muscle were divided in order to expose the esophagus. The esophagus was sectioned (fig. 2) between two forceps as close to the stricture as possible. The distal portion was buried, one end being left in the mediastinum. The upper or proximal portion was sutured to the skin of the neck three or four fingerbreadths from the clavicle (fig. 3).

The forceps which closed the superior portion, now sutured to the skin, was left in place for several days until it came off with the sloughing tissue.

On October 12, 1938, a minor plastic operation was necessary because the cervical orifice of the esophagus was partially obstructed by the formation of scar tissue.

The third stage of the operation was performed June 23, 1939. A cutaneous tunnel about 2 cm. in diameter was established be-

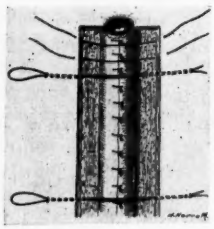


Fig. 5. Edges of flap from which cutaneous tunnel was constructed sutured with catgut and reinforced with silk.

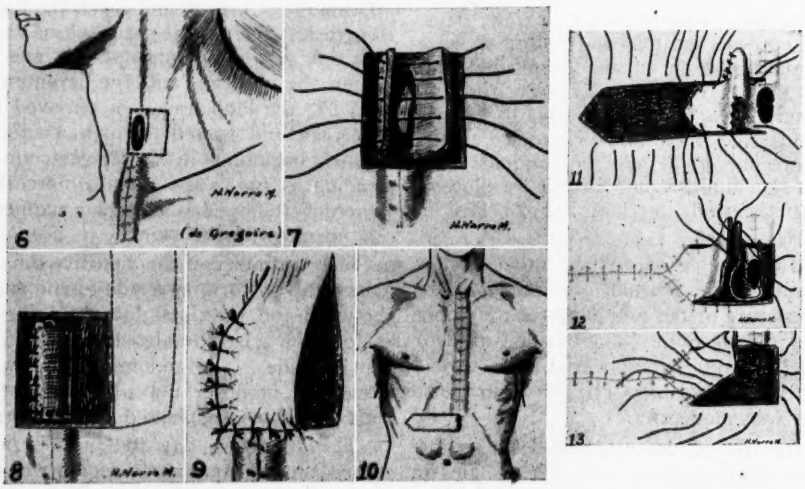


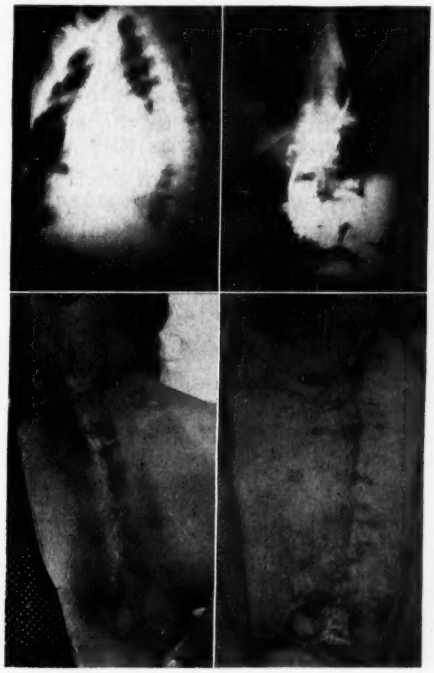
Fig. 6. Esophageal orifice. Figs. 7-9. Steps followed to establish communication between cervical esophagus and cutaneous tunnel. Figs. 10-13. Steps followed in establishing communication between cutaneous tunnel and jejunum.

tween the segment of the cervical esophagus attached to the skin and the jejunum, sutured at the level of the left fourth intercostal space (fig. 4). Two parallel incisions were made 5 cm. apart, the internal portion of these being dissected for 1.5 cm. and the cellulo-adipose tissue being conserved in order to leave a pedicle to insure the nutrition of the skin. The edges of the flap were sutured in three layers with No. 00 catgut. The skin on each side of the flap was dissected in order to cover the tunnel created and to leave a smooth surface. As the patient was a young girl, it was relatively easy to move the skin in such a way as to prevent tension of the sutures. A few silk sutures were placed to reinforce the other stitches and prevent the latter from cutting the edges of the wound (fig. 5).

Direct communication of the cutaneous tunnel with the cervical esophagus left sutured to the skin, or with the jejunum sutured to the precordial region, was not established at this time because it was deemed advisable to obtain complete cicatrization of the tunnel before feeding by mouth was permitted. The patient was still being fed through a rubber tube placed in the stoma of the jejunum. The postoperative recovery was uneventful.

On September 14, 1939 the cervical esophagus was united with the prethoracic tunnel (figs. 6-9). An incision was made parallel to the midline, very near to the esophageal orifice and of sufficient length to include the latter and the orifice of the cutaneous tunnel; an incision of the same size as the previous one was made to the right of these orifices and a little further from them than the first incision. Two transverse incisions were then made at the upper and lower limits of the first two incisions, a small quadrangle being formed; the left border of the right incision was moderately detached, with a greater detachment of the right border of the left incision in order to detach a flap of skin which, after its edges were approximated, would enclose in its cavity the orifices of the cervical esophagus and the cutaneous tunnel. A small fistula was present for a few days, but this soon healed and complete cicatrization was obtained. The communication between the cervical esophagus and the tunnel was thus assured.

On October 18, 1939, another plastic operation was performed to establish the communication between the cutaneous tunnel and the jejunum (figs. 10-13). This was done in two stages; first a rectangular flap was obtained by making two horizontal incisions, the orifices being included between them. The incisions were 3 or 4 cm. in length and were made to end in points, being folded in two (figs. 10 and 11). The edges of the raw surface were sutured after approximation of its edges. Later the flap was divided vertically; its left border was sutured to the opposite one and thus another small tunnel was formed; the right flap was used to cover the raw surface in the manner described by Raymond Grégoire.



Figs. 14 and 15. Upper left and right. Roentgenologic examination made after completion of plastic procedures showed normal emptying time of stomach.

Fig. 16. Lower left. Scar produced by esophagoplasty performed on Mrs. A. O. in 1929. Esophagus still functions well.

Fig. 17. Lower right. Scar produced by esophagoplasty performed on 17-year old girl (E.P.).

About the middle of November, 1939, the plastic procedures were completed. Radiologic examination showed that barium ingested by mouth left the stomach in normal time (figs. 14 and 15).

During the time that the communication between the jejunum and the cutaneous tunnel was being established, the patient was fed through a tube inserted through the nose.

At the time of this writing the esophagoplasty was complete with the exception of the repair of the portion covering the jejunum.

A similar operation, performed on another patient previous to the one herein

reported, was unsuccessful because of the presence of carcinomatous degeneration.

SUMMARY

A method of esophagoplasty is described whereby a loop of the jejunum was resected; this loop and a tunnel formed from cutaneous tissue were substituted for the stenosed portion of the esophagus. The distal end of the jejunal loop was anastomosed to the stomach, and the proximal loop, to the cutaneous tunnel; the proximal end of the tube was sutured to the esophagus after the stenosed portion had been removed. The operation was performed in seven stages. Perfect function resulted.

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RÉSUMÉ

Esophagoplastic préthoracique

Une anse de jejunum est réséqués et cette anse et un tunnel formé de tissu cutané sont substitués à la portion sténosé de l'ésophage. L'extrémité distale de l'anse jejunale est anastomosée à l'estomac et l'extrémité proximale au tunnel cutané. L'extrémité proximale du tunnel est suturée à l'oesophage après l'ablation du segment sténose. L'opération fut exécutée en sept étapes. Le résultat fonctionnelle est excellent.

ZUSAMMENFASSUNG

Antethorakale Thorakoplastik

Es wird eine Methode der Oesophagoplastik beschrieben, bei welcher eine Jejunumschlinge reseziert wird. Diese Schlinge und ein Hautschlauch ersetzen den verengerten Spiseröhrenabschnitt. Das distale Ende der Schlinge wurde mit dem Magen, das proximale mit dem Hautschlauch vereinigt. Das proximale Ende des Hautschlauches wurde mit der Speiseröhre vereinigt nach Entfernung des verengerten Abschnittes. Die Operation wurde in sieben Zeiten ausgeführt. Das Resultat war ausgezeichnet.

SUMARIO

Esoagoplastia pretoráxica

Un método de esofagoplastia es descrito donde una asa del yeyuno fue resecada y esta asa y un tunel hecho de tejidos cutaneos fueron substituidos por la porcion estenozada del esofago. La porción distal del asa yeyunal fue anastomozada á el estómago y la porción proximal, á el tunel cutaneo; la porción proximal del tunel fue suturada á el esofago despues que la porción estenozada ha sido removida. La operación fue hecha en siete tiempos. La función resulto perfecta.

RIASSUNTO

Esofagoplastia pretoracica

Un metodo di esofagoplastia è descritto per mezzo di cui ci fù una resezione del nodo scorsoio del diguino, e questo nodo scorsoio e un imbuto formato da tessuto cutaneo furono sostituiti per la porzione stenosata dell'esofago. L'estremità periferica del nodo scorsoio digiunale fù anastomizzato allo stomaco e il nodo scorsoio prossimale, all'imbuto cutaneo; l'estremità prossimale dell'imbuto fù suturato all'esofago dopo che la porzione stenosata fù levata. L'operazione fù fatta in sette stadü. Funzione perfetta risultò.

ANESTHESIA IN MEXICO DURING THE NINETEENTH CENTURY

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Member of the National Academy of Medicine

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THE progress of anesthesia is so closely allied with the progress of surgery that its development in Mexico is well worth recording. In tracing its progress the writer has searched all available literature for articles on the subject, including students' theses, medical publications and reviews of scientific societies. The first portion of the results of this record appeared in the form of a summary in the *Gaceta Medica de Mexico,* the official organ of the National Academy of Medicine (Vol. XIX, Nos. 3 and 4), and in a subsequent number of this publication the final portion will appear. Later a complete bibliography of the national literature on the subject to the present date will be published in a single volume. By consulting this series of papers or this book, one may find any desired reference on anesthesia in Mexico.

A very short period of time intervened between the discovery of the first anesthetic substances and their use in this country. Dr. Martinez del Rio was the first to administer ether and chloroform in Mexico. Subsequently, chloroform was preferred and most of the literature compiled referred to it. Dr. del Rio called attention, nevertheless, to the fact that, despite the crude method of administering chloroform (dropping bottle and a strip of gauze) and despite its many impurities, few fatal accidents occurred. The anesthetist was thus confident of his work and as a result, many years elapsed before care was recommended in the use of chlorotorm.

The early record of complications which developed following surgery did not differentiate between those caused by the anesthetic per se and those caused by the surgical intervention and thus the responsibility of either the anesthetic or the surgical operation was not defined or established. It was not until later that a distinction was made and fatalities ascribed to definite causes.

In this paper attention is called to the first use of ether in rectal anesthesia (1884), the use of cocaine as a local anesthetic (1895), several administrations of anesthesia in obstetrics and a few facts regarding the use of nitrous oxide.

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SUMMARY

The author presents, by means of a bibliography arranged in chronological order, the development of anesthesia in Mexico from its inception to the end of the nineteenth century.

RÉSUMÉ

L'anesthésie au Mexique durant dix-neuvième siècle

L'auteur nous présente, au moyen d'une bibliographie arrangée en ordre chronologique, le développement de l'anesthésie au Mexique, jusqu'a la fin du dix-neuvième siècle. Dans une publication ultérieure, cette bibliographie sera amenée à nos jours. Un livre renfermant tous ces renseignements sera publié.

ZUSAMMENFASSUNG

Anästhesie in Mexiko während des neunzehnten Jahrhunderts

Verfasser bringt mittelst eines chronologisch angeführten Literatur-verzeichnisses die Entwicklung der Anästhesis in Mexiko bis zum Ende des neunzehnten Jahrhunderts. In einem spätern Aufsatze soll die Bibliographie bis zur Gegenwart weitergeführt werden. Dieses Material soll dann in Buchform veröffentlicht werden.

SUMARIO

Anestesia en Méjico durante el siglo XIX

El autor presenta, por medio de una agrupación bibliográfica en orden cronológico, el desenvolvimiento de la anestesia en Méjico hasta la terminación del Siglo XIX. En un articulo subsecuente la bibliografía sera completada hasta la presente fecha.

RIASSUNTO

L'anestesia nel Messico durante il secolo decimo nono

L'autore presenta, mediante una bibliografia arrangiata in ordine cronologico, lo sviluppo dell'anestesia nel Messico sino al fine del diciannovesimo secolo. In un articolo susseguente la bibliografia sarà finita ad attualità. Questo materiale sarà poi pubblicato in forma di libro.

REMITTANCES FOR DUES: CHECKS SHOULD BE MADE OUT TO DR. BENJAMIN I. GOLDEN, TREASURER, AND MAILED TO MR. RALPH E. OSBORNE, BUSINESS SECRETARY, 2543 PARKWOOD AVE., TOLEDO, OHIO.

TWO NEW INSTRUMENTS FOR CRANIOTOMY

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THE discovery and study of old skulls presenting bony losses produced with a deliberate therapeutic purpose give evidence that such surgical attempts are indeed very old. It is safe to assume that opening the skull was performed in ancient times by the Egyptians and Greeks as well as by the Peruvians and the Aztecs on the American Continent.

The vestiges of the procedures of those ancient days show that a strange interest moved surgeons to penetrate into the mysteries of the interior of the human skull.

Some remarkable cases are those in which the extent of bony loss is not proportional to the form and extent of other losses; the condition obviously resulted from the healing of a fracture or an osteomyelitis focus. However, with but few exceptions, up to the end of the last century craniotomy was performed solely for the purpose of applying a treatment to the cranial wall, particularly in fractures and probably also in cases of suppurative and neoplastic processes.

In 1889 Wagner started the scientific revolution that is now beginning to play such an important part in the surgery of the world. This consisted in performing a craniotomy with the sole purpose of reaching the nervous tissue contained within the cranial case. Thus surgery of the skull is being transformed from a therapeutic measure with a single purpose into the first step of more extensive operations on the nervous centers. Craniotomy should be to cerebral surgery what laparotomy is to abdominal surgery today.

The walls of the gross cavities of the human body vary as to their tissues and as to their anatomic structure in proportion to the function of the organs contained therein. The abdomen, the receptable of organs in contact with the outside world, is formed by walls composed almost entirely of soft tissues. On the other hand, the thorax, the main organs of which are exposed to the outside world in a finer and more delicate way than are those contained in the abdominal cavity, has a framework formed by bony elements, alternating with soft tissues; thus the intrathoracic organs are protected in proportion to the delicacy of their anatomic structure and especially their function.

The protection of the encephalon by means of a suitable case has been an organic necessity. This bony structure is molded by the brain itself in accordance with the necessities of formation, development and function. The skull is an almost closed case that has but one orifice below and posteriorly—the foramen magnum. The orbits and the cribriform plate of the ethmoid are weak points, but they are protected by their deep situation, so that the content of the brain may be considered to be hermetically enclosed in a bony case so strong that it is capable of offering great resistance to injury.

In the surgery of the skull, two fundamental problems have lacked adequate solution up to the present time: (1) hemostasis and (2) cutting of the bone.

METHODS OF PRODUCING HEMOSTASIS

Various instruments and technics have been employed at different periods,

some of which are still in use. Hemostatis in craniotomy is of especial importance to both the scalp and the bone. Hemorrhage can usually be stopped except in hairy skins. The difficulty encountered in hairy skins is due to peripheral vascularization. Many kinds of compressive forceps designed to stop hemorrhage have been used unsuccessfully.

The need for better methods of producing hemostasis resulted in the construction of a special type of forceps to be used on hairy skin. Among those who devised such forceps were Krause, Nicholson, Howzel and Chipault.

Heidenhein, in an attempt to produce hemostasis, placed a suture in successive semicircles along two parallel lines, at a distance of one and one-half or two centimeters from each other, between which the skin was to be incised. This long suture required much time and effort, and yet it did not prove entirely satisfactory. Crile advised temporary compression of the carotid vessel, a method which is both difficult and dangerous, for the vessels of the opposite side continue to bleed more or less abundantly.

More recently Cushing, the father of craniocerebral surgery on the American Continent, devised an elastic ring to be placed around the head at the level of the glabella and the suboccipital region. The ring has a ribbon attached to its anterior and posterior sides, which passes along the middle of the skull following the metopic suture and prevents it from slipping down over the eyes. Cushing admitted that the device did not obtain good hemostasis because of the incomplete circular compression and the communications of the endocranial circulation with the scalp.

The Allis forceps, which have a small pin at one end and a flat plate at the other, are unsatisfactory because the two ends form an acute angle with the result that greater compression is produced on the part of the angle near the articulation than on the part corresponding to the sharp end of the forceps. Frequently this compression has caused serious crushing of the skin, while the points near the ends of the forceps continued to bleed.

Other types of forceps similar to the Allis forceps and operated by a spring have failed to give uniformly good results.

Local anesthesia is proving to be a powerful auxiliary to the production of hemostasis of the scalp, even without a vessel constrictor, for it operates by the compression resulting from infiltration into the tight network of the subcutaneous fat tissue of the scalp.

In this way it is possible to make an absolutely bloodless incision. However, because of the fact that a considerable amount of time elapses before the tissues are sutured, the anesthetic loses its effect, hemostasis ceases and the hemorrhage begins after a while, increasing with the passage of time.

The problem, then, is to maintain hemostasis during the time required for the tedious cerebral operation. Hence the idea of surrounding the edges of the wound with Kelly's forceps was originated; this proved useful and efficient. Two assistants, one standing by the side of the surgeon and the other opposite him, should compress the scalp, their fingers close to the line of the incision. After the local anesthesic is infiltrated, the surgeon incises the scalp down to the pericranium and starts placing the Kelly forceps on the pericranium itself along the external edge of the incision, each forceps at a distance of approximately 1 cm. along the entire length of the wound. The forceps grasps the pericranium and is turned outward from the incision, thus lying on the edge and consequently compressing it. As for the internal edge, as many forceps as necessary are used.

In this manner it is possible to obtain good and lasting hemostasis, started by the infiltration of the anesthetic, continued by the pressure of the fingers and maintained by the pressure of the Kelly forceps on the edge of the skin and the pericranium. The procedure has the disadvantages of being tiresome and of requiring a large number of forceps. The surgeon may tie them in bundles of eight or ten and make four, five or six such bundles; he should arrange the bundles carefully so that they will not interfere with the operation.

More recently, Adson modified the pincers originally devised by Andrews and turned the instrument into a small metallic frame which, when folded in the middle, one edge opposing the other, forms a U which embraces the entire thickness of the soft tissues and is maintained in place by means of teeth very similar to those of Mitchel's pincers. The placing of this device requires the same procedure formerly described, that is, the surgeon cuts a section previously pressed by his assistants, who pull the edge towards them and then lift it slightly so that the surgeon may grasp it with the aid of an indented forceps. Finally, with the aid of the pincers fixed on a large, strong forceps, which he uses with his free hand, the surgeon grasps the entire edge of the cutaneous incision.

The necessity of making the incision before placing the forceps, no matter how good the pressure executed by the assistants may be, implies the presence of a small amount of blood; a larger amount of blood is present when local anesthesia has not previously been given. As the pincers are made of metal, the initial pressure of the forceps upon it is, in many cases, found to be insufficient for sustaining the compression of the edge, so that, with the release of the forceps, the pincers open slightly. It is then necessary to stop the bleeding of some vessel lying between the two branches of the U. The pincers must be placed close to each other in order to surround the edges of the incision on the scalp. Naturally a large number of these is required for a large incision.

Hemorrhage of the diploë, though never equal to the hemorrhage of the scalp, is important, however, especially since it causes considerable inconvenience during the operation.

Hemorrhage of the diploë which occurs during the cutting of the bone with a Gigli saw, before the dependent part has been raised and fractured, cannot be stopped because the vessels remain open within the wound itself and because the space between the cut edges is so narrow that they are inaccessible. Hemostasis is possible only when the dependent bone has been fractured and removed. If there is considerable hemorrhage, speed in operating helps to solve the problem.

In addition to certain procedures now in disuse, such as the application of the Krause metallic hooks, is the fairly recent practice of inserting small pieces of muscular tissue into the diploic spaces by means of a fine stiletto, or even a simple hypodermic needle.

Many other methods have been discarded. Sometimes the mere separation of the vessel from the osseous wall with the edge of the needle was found to be sufficient to obtain complete stoppage of bleeding. Another method was the introduction of small spikes of ivory or of decalcified bone into the blood vessel to obstruct the passage. In order to diminish the oozing of blood which takes place at those points where the vessels are invisible to the naked eye, a few gentle strokes with the chisel are sufficient to sink the diploic layer slightly and to obstruct the passage with the tiny fragments of bone produced by the chisel strokes, thus facilitating the coagulation of blood issuing from the small vessels.

These methods have been superceded by the use of Horsley's aseptic wax which efficiently stops hemorrhage of the diploë. If bleeding occurs from every

point of the external cut of the bone, the wax must be applied over the entire surface.

METHODS OF CUTTING BONE

The second problem, that of the cutting the bone, is a vital one. Wagner in 1889 used a hammer and chisel for craniotomy, a procedure that was objected to because of the danger of producing cerebral concussion. In fact, operations performed with this method resulted in a high mortality. Toison in 1891 used for this operation a chain saw which he introduced into one trepan hole, allowing the other end to emerge through another hole placed at a convenient distance. Alternating movements given to the saw by two handles fixed at the ends cut through the section of bone between the trepan holes.

Obalinsky in 1897 preferred the Gigli saw, which was manufactured that same year for obstetrical purposes. His procedure, with a slight modification in the instrument, has been used up to the present time by surgeons who operate on skulls.

The usual procedure in North America is to make several trepan holes along the proposed line of the cut and to introduce the Gigli saw into one hole and allow it to emerge through another, with the aid of a conductor plate fashioned after Marion's model. The number of trepan holes varies with the length of the opening. When in use, the saw has the shape of the chord of an arc and thus it is likely to injure the meninges. To prevent this, two conductor plates are used in such a way that when one plate is removed with the forward movement of the saw, the other plate remains in contact with the dura mater, and in this way the alternating movements of the saw cause no damage. The cutting is completed with the de Vilbiss cutting forceps, which are used to remove small fragments of bone.

De Martel devised an electric automatic lathe and a vertical cutter of helicoidal shape which made a cut from four to five millimeters wide. It was provided with a meningeal protector. Both the lathe and the cutter were driven by an electric motor.

Cushing preferred the earlier methods which, although slower than those requiring the use of the new instruments, are less dangerous in his opinion. He cut the bone between two trepan holes, advancing from one primary aperture only. The cut was made from inside out and in such a way as to obtain beveled edges, so that the replaced bone would not sink into the opening made by craniotomy. He used a lathe attached to a wimble to bore the trepan holes and cut the bone between the holes with a Gigli saw. By giving the saw the proper tilt, he produced a beveled edge to the bone. At the extreme ends of the cut he used the Dahlgren instead of the de Vilbiss forceps.

Similar technics have been used by other North American surgeons, such as Adson, Loyal Davis, Dandy, Freeman and Sachs. Verbrugghen uses a device consisting of a large, strong lever attached by one end to a pivot which, in turn, is inserted into a trepan hole in the center of a circle, along the circumference of which the cut was to be made. The lever is equipped with a knife which, rotating around the pivot, cut a circle of bone. This instrument is quite useful, although it requires effort and exertion.

In Europe, excepting for De Martel, who uses his own instruments, surgeons employ the same technic used by the surgeons of North and South America. The imperfections in the technic of craniotomy have been forgotten because of the interest in endocranial work, chiefly as a result of the progress made by neurology and neuropsychiatry and the analysis of clinical phenomena localized in the functional zones. For 15

years no one has paid any attention to the problems of hemostasis in craniotomy and to the most effective methods of cutting the bone.

After experimenting for a period of four years with instruments and systems, my associates and I believe that we have solved the first problem, at least, and that we have partly solved the second problem. This is accomplished with instruments adapted to this purpose. In the majority of our cases, these instruments have been very successful. Hemostasis of the diploë is accomplished by the bone cutting instrument.

INSTRUMENTS AND TECHNIC FOR HEMOSTASIS OF SCALP

Hemostasis is obtained through the combination of the infiltration of the solution used for local anesthesia (one-half per cent; adrenalin in most cases) and the compression rendered by the instrument shown in Figs. 1-3.

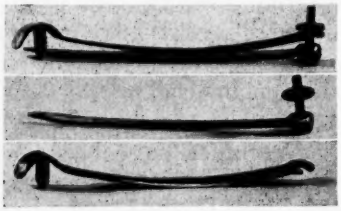
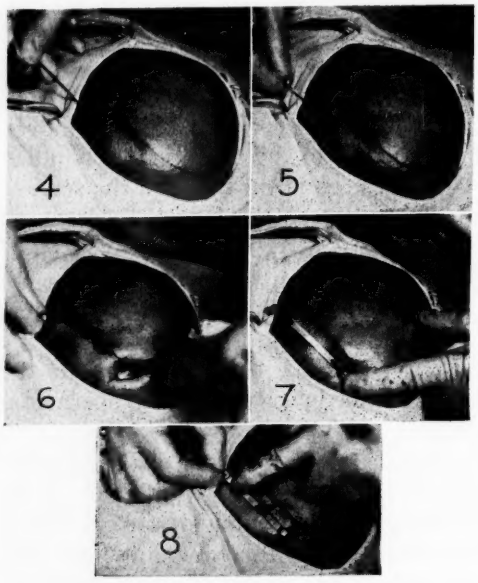


Fig 1. Above, hemostatic compressor. Fig. 2. Center, needle of hemostatic compressor, 7.5 cm. long, triangular in shape, each side of triangle being 1.5 mm. wide; end of needle is sharp and slightly curved; nut on screw at opposite end is not removable.
Fig. 3. Below, steel plate, tempered as a spring; semicircular end protects point of needle, which is inserted into one of the holes.

The instrument is composed of a needle (fig. 2) and a steel plate (fig. 3). The needle is 7.5 cm. long, triangular in shape (for ease of insertion into the skin) with each side measuring 1.5 mm. and sharpened at one end like the sharp end of a sword but curved towards the end. The other end is provided with a small piece of metal on which is placed a screw that forms a right angle with the needle. A small nut which cannot drop off is attached to the screw. The length of the needle conforms to the length of a tangent that can be placed over any of the curvatures of the skull along an extension varying from 4 to 6.5 cm. The sharpness of the end of the needle permits it to glide over the bony plane and prevents it from emerging through the skin before it has reached the desired point.

In order to make the needle emerge through the skin, one must rotate it with the screw one quarter of a turn, thus making the screw straight. This operation brings it to a vertical position over the surface of the scalp. If the sharp end of the needle does not penetrate the scalp spontaneously, the skin should be pressed at the point where it is to perforate the skin from inside out; the needle should then be pushed through the soft tissues. With the line for the incision marked along the anesthetized area, the needles are introduced, approximately 1 or 1.5 cm. outside the line, each needle being given a slight inclination in the direction opposite to that which they are to follow under the skin. When it touches the bone, the needle is pushed in the desired direction by maintaining the screw inclined on one side, so that it crosses the necessary extension in a line parallel



Figs. 4 and 5. Line of incision has been marked on scalp; needle is thrust between scalp and skull for a distance of 4 to 6.5 cm.
Fig. 6. At place of emergence through skin, needle point is inserted in hole of metal bar. Fig. 7. Slot at opposite end of bar is slipped over screw on end of needle.
Fig. 8. Pressure is exerted on bar with finger of one hand and screw is tightened with other hand.

to the proposed incision and the plane of the bone. This is obtained by varying the first position adopted to pierce the skin and giving the needle an inclination until it is parallel to the bony plane.

Since the needle has been introduced between the bone and the soft tissues, and since it embraces an area from 4 to 6 cm. in length between its entrance and its emergence, the second part of the instrument will compress at the desired pressure the entire thickness of the scalp.

The steel plate (fig. 3) is tempered as a spring. At one end it is semicircular in shape; from the inside of this semicircle extends a small piece also like a plate, more or less perpendicular to the body of the main plate. This small piece is provided with two small holes placed vertically, one under the other.

The sharp end of the needle is adjusted to these holes which are 2 mm. apart and it is thus lodged in the semicircular curvature. This is to avoid accidental pricking. The other end has the shape of a wheel 6 mm. in diameter and is provided with a slot at right angles to the main plate. The screw is adjusted to the slot and the nut rests on that end. When this end is pressed with the forefinger of one hand and at the same time the nut is lowered with the other hand, the plate is fixed in the desired position.

All the needles of the instrument are introduced at the previously indicated distance so as to surround the entire contour of the incision, including the base of the dependent soft tissue.

Figs. 4-8 indicate the different stages of the introduction of these small needles. These instruments permit one to make, after their insertion, an incision down to the bone with one stroke of the scalpel. The instrument has been named the *hemostatic scalp compressor.*

Thus hemostasis, started by the local anesthetic, is continued and maintained during the operation by means of this instrument. Hemostasis is usually complete. Sometimes slight bleeding occurs at the time of the cutting. This is merely the oozing of the blood which remains stagnant after the hemostatic compressors are placed in position; it stops entirely as soon as the blood has been absorbed with gauze.

With a little practice, seven or eight compressors — enough to surround a fairly large zone — can be inserted in from 4 to 5 minutes. Once in place, they need no further attention.

The instrument is sterilized in a fatty substance in the autoclave. Thus the sharp ends of the needles remain undamaged and the temperature of 123° of the autoclave does not affect the metal, which would certainly happen if the fatty substance were boiled at a temperature of 280°.

INSTRUMENTS AND TECHNIC FOR CUTTING BONE AND HEMOSTASIS OF DIPLOE

After many modifications we have finally adopted the craniotome here described. Although we believe that still greater efficiency can be obtained, this instrument is a good one and it has given satisfactory results in most cases. Originally it was an adaptation of De Martel's instrument, but many modifications have now been made, especially of the cutter. It is driven by a small electric motor which produces 25,000 revolutions per minute. The manufacturers advertise is as the motor of one thousand and one applications. We believe that it has added one more application to its list.

By adapting a small conical gear of 12 teeth attached to one end of the axle and adjusting it to a second conical gear of 24 teeth, the rotating movement was changed from right to left; in addition, its rate of speed was reduced by half and its power was doubled (fig. 10).

The motor is lodged in a metallic case of very thin walls perforated to assure ventilation and to avoid overheating of the motor. Another case, adjusted to one end of the metallic case, contains a larger axle, perpendicular to the former. Inside this second case are mounted two ball bearings that support a hollow axle to which the twenty-four-toothed gear is adjusted (fig. 11). With the introduction of the motor into the case, the small gear automatically becomes adjusted to the larger one. A screw cap that carries the connections of the motor

tightens it by means of a spring, thus fastening the case at the opposite end (fig. 12).

The specially carved lathe is 1.4 cm. long and has a diameter of 1.7 mm. The lathe is provided with one longitudinal carving and another one in a spiral, extending from left to right. The intersection of the two carvings results in the formation of small teeth directed to the left, so that the rotation of the saw to the left causes friction between each row of teeth and the bony matter with the motor as well as the surgeon than with an instrument which gnaws as it cuts. Furthermore, with the instrument herein described, the cut is made quite rapidly due to the great speed of the cutter.

At its lower part, the cutter ends in a pivot which leans against a small cushion set up on an even and oval piece having thin and blunt edges. This piece is the continuation of a plate which protrudes from the case containing the movement of the gears.

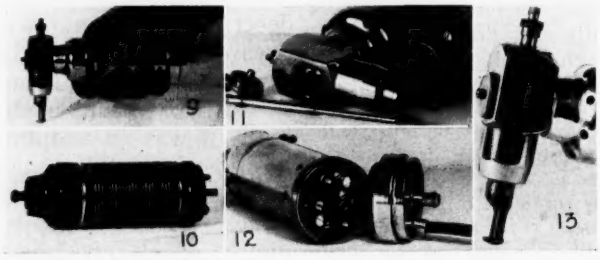


Fig. 9. Instrument for cutting skull. Fig. 10. A small conic gear with 12 teeth was attached to one end of axle and adjusted to a second conic gear of 24 teeth.

Fig. 11. Metallic case, perforated to assure ventilation, in which motor is lodged, and second case, which is adjusted to one end of metallic case and which contains a larger axle perpendicular to the former; inside second case are mounted two ball bearings that support a hollow axle to which the 24-toothed gear is adjusted. Fig. 12. Introduction of motor into case causes the small gear to adjust automatically to the bigger one; a screw cap that carries the connections of the motor tightens it by means of a spring, thus fastening the case at the opposite end.

Fig. 13. Lathe is provided with longitudinal and spiral carvings, the intersection of the two carvings resulting in the formation of small teeth, directed to the left. "Skate" is lowermost portion of the instrument against which pivot of cutter rests; "skate guide" is portion which maintains the skate in adjustment with the remainder of the apparatus.

which they come in contact. Inasmuch as these teeth are very fine, the cutting is done by a gnawing action. In this manner the cutting produces a very fine dust of bone that is projected out of the space between one edge of the cut and the other, by the very movement of the spiral contrary to the rotary direction.

It has been possible to use this small motor because the gnawing is done by very small teeth. In De Martel's apparatus, the cutter of which has no teeth, more power is required on the part of

This little piece containing the small cushion against which the pivot of the cutter leans is the *skate*. The small plate which maintains the skate in adjustment to the remainder of the apparatus is the *skate-guide*. Upon maintaining the body of the apparatus in a horizontal position, the skate-guide remains in a vertical position parallel to the cutter. This latter shows only its carved part intended for cutting (fig. 13).

The hollow axle protrudes from the upper part of the case. The cutting

instrument can be replaced or removed through the axle without dismounting the entire apparatus; it is necessary merely to remove the nut, withdraw the handle of the cutter, introduce the new one into the hollow axle and fix it again by means of the nut (figs. 12 and 13).

The apparatus itself can be thoroughly sterilized. This is accomplished by removing the motor. The cap must be sterilized in boiling water to assure conservation of the fibrous part that carries the motor connections, together with the rubber cover and the electric wire contact. It is preferable, however, to sterilize both the cover and the cutting instrument in liquid vaseline in the autoclave.

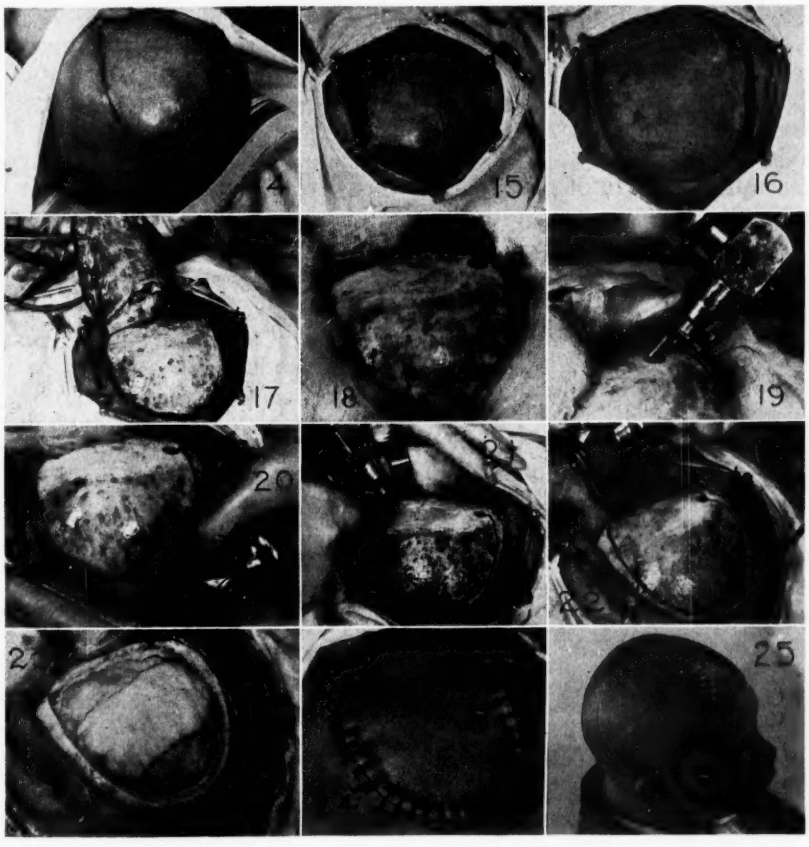


Fig. 14. Local anesthesia has been obtained and incision line traced by superficial cutting of skin. Fig. 15. Hemostatic compressors circumscribing the future flap in position, about 1 cm. outside the line of incision. Fig. 16. Incision of scalp has been performed in a single cut down to the bone.

Fig. 17. Skin flap with underlying tissue pulled upwards, leaving bony surface exposed. Fig. 18. Skin edges as well as flap are protected with compresses kept moist by physiologic salt solution. A single trepan hole has been drilled in the bone. Fig. 19. Introduction of shoe-shaped "skate guide" through trepan hole, pushing back the dura.

Figs. 20 and 21. Portions of the incised area. Fig. 22. First cutting is finished and another cutting, starting from trepan hole, is being made in the direction of termination point of first cutting.

Fig. 23. Beveled edge of bone can be seen. Fig. 24. Hemostatic suture as well as suture joining both skin edges being finished; hemostatic compressors have been removed. Fig. 25. Cutaneous scar 11 days after extensive craniotomy for removal of brain tumor.

The motor, which is not aseptic, must remain enclosed within the cover, and the small gear which comes in contact with the large gear remains outside the metallic tube through the hollow interior of which the cutting instrument passes. The latter is perfectly isolated from the cases containing the gears, where the nonaseptic motor comes in contact with the aseptic external portion of the hollow axle.

The size and the weight of the apparatus make it extremely handy. With this instrument it is not necessary to make more than one trepan hole. From this single aperture the craniotome can follow any sharp curve or move in any desired direction.

The skate protects the meninges and separates them from any possible adhesions. This is probably obtained with this apparatus as easily as with any of the other instruments used for this purpose.

A beveled edge can be obtained by inclining the instrument, at least in places where the bony wall is not too thick and the opening is sufficiently small.

Finally, the cutter, due to the speed at which it rotates, produces bone dust which is introduced by the centrifugal force of the cutter into the small holes of the diploic ducts. Almost perfect hemostasis is the result. Only the cutting of a vessel of considerable caliber would cause free bleeding. If this occurs, it is usually sufficient to apply the cutter once more to the bleeding point to stop hemorrhage. However, should this fail, the proper thing to do is to use any of the known means described previously in this article.

The accompanying illustrations (figs. 14-25) depict the various steps in performing a craniotomy with these instruments.

During the last several years, we have performed nearly every type of craniotomy or craniectomy. In craniectomy, we do not leave a bony portion to be removed by fracturing, for we can cut a circular, oval, square or triangular area, without the necessity of subsequent fracture and the production of dangerous chips.

For the proper functioning of the apparatus, the constant lubrication of the cutter is imperative. An assistant should apply a jet of salt solution of 39° over the line of cutting. This prevents the dust from drying due to the rise in temperature from friction and to the accumulation of dust between the teeth.

SUMMARY

The author describes an instrument which he has devised for performing craniotomy and his method of producing hemostasis of the scalp and the diploë. With this instrument the surgeon is able to cut from the skull a circular, oval, square or triangular area. Hemostasis of the scalp is obtained by inserting needles outside the incision, each needle being held firmly by a metal plate. Hemostasis of the diploë is secured by the bone dust produced by cutting the bone. Results from using these devices in the General Hospital, Mexico City, for three years have been satisfactory.

RÉSUMÉ

Un nouvel instrument pour la craniotomie

L'auteur décrit un instrument qu'il a inventé pour la craniotomie et sa méthode pour assurer l'hémostase du cuir chevelu et du diploë. A l'aide de cet instrument il peut élever un lambeau cranien cerculaire, triangulaire, carré ou ovale. L'hémostase du cuir chevelu est assurée à l'aide d'aiguilles placées au-delà des bords de l'incision et maintenues en place à l'aide de champ. L'hémostase du diploë est assurée par la poussière d'os produite par la section de l'os. Cet appareil est employé à Mexico depuis

trois ans et a donné des résultats satisfaisants.

ZUSAMMENFASSUNG

Ein neuses Instrument für Kraniotomie

Verfasser beschreibt ein von ihm erfundenes Instrument für Kraniotomie und seine Methode der Blutstillung im Perikranium und Diploe. Mit diesem Instrument vermag er runde, ovale, viereckige oder dreieckige Stücke aus dem Schädel zu schneiden. Blustillung im Perikranium wird erzielt durch Umstechung mit Nadeln ausserhalb des Schnittes, wobei jede Nadel durch eine Klemme straff gehalten wird. Die Blutstillung in der Diploe wird durch den Knochenstaub erzielt, der beim Schneiden des Knochens erzeugt wird. Die Erfolge mit dieser Methode am allgemeinen Spitale in Mexiko während drei Jahren waren zufriedenstellend.

SUMARIO

Un instrumento nuevo para craneotomía

El autor describe un instrumento el cual ha sido hecho para hacer craneotomias y su método para producir hemostasia del cuero cabelludo y del diploe. Con este instrumento él es capaz de cortar el craneo en una forma circular, oval, cuadrada ó triangular. Hemostasia del cuero cabelludo se obtiene introduciendo agujas afuera de la incisión, cada aguja es sostenida firmemente con una pinza. Hemostasia del diploe es asegurada por el polvo de hueso producido al cortar el hueso. Los resultados en el uso de este instrumento en el Hospital General, Mexico City, durante tres años ha producido resultados satisfactorios.

RIASSUNTO

Uno strumento nuovo per la craniotomia

L'autore descrive uno strumento che egli ha inventato per fare la craniotomia e il suo metodo per produrre l'emostasi del pericranio e del diploe. Con questo strumento egli può tagliare dal cranio un'area circolare, ovale, quadrata o triangolare. Si è ottenuta l'emostasi del pericranio, inserendo aghi fuori l'incisione, ciascun'ago tenuto fermamente in posto per una pinza. Si ottiene l'emostasi del diploe dalla polvere dell'osso, prodotta col tagliare l'osso. I risultati dell'uso di questi strumenti nell' Ospedale Generale nella Città di Messico per tre anni sono soddisfacenti.

The John Hunter Medal and the Triennial Prize were presented to **Col. L. E. H. Whitby** at a recent meeting of the Council of the Royal College of Surgeons of England. The Jacksonian Prize for the year 1939 was awarded to **F. F. Rundle** for his essay on "The Pathology and Treatment of Thyrotoxicosis"; and a certificate of honorable mention was awarded to **N. M. Harry,** of Melbourne, for an essay on the same subject. The subject approved for the Jacksonian Prize for 1941 was "Injuries to Peripheral Nerves, with Especial Reference to the Late After Results."

The Medical Society of New Jersey held its one hundred and seventy-fourth annual meeting June 3, 4 and 5 at Haddon Hall, Atlantic City. In addition to sections on the various specialties, combined sessions were held for medicine and gastroenterology; pediatrics and radiology; and surgery, obstetrics and gynecology. **Dr. Hyman I. Goldstein,** of Camden, was chairman of the gastroenterology division and **Dr. Thomas M. Kain,** also of Camden, was chairman of the medicine division.

SOME CONSIDERATIONS ON SPINAL ANESTHESIA

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CORNING was first to conceive the idea of injecting analgesic substances into the spinal canal. Quincke developed the idea of lumbar puncture and its technic, while Bier was first to apply it in humans. Subsequently, Tuffier, Chaput, Doleris and many others adopted the procedure. Because of its harmlessness to the general system, spinal anesthesia has become popular. It is indicated when other methods of anesthesia are contraindicated because of certain dangers. It is often used for a great number of operations upon the lower half of the body.

Various preparations have been used, such as cocaine, stovain, percaine, novocaine, scurocain and combination preparations, such as stovain-strychnine. Used as chemically pure salts, they are dissolved directly in the cerebrospinal fluid. The injection is made into the spinal canal at different levels, the use of the procedure being possible even for operations upon the arms and the head.

To obtain anesthesia at a higher level, injection of the fluid at higher levels is recommended, even up to the space between the atlas and the occipital bone. In order to obtain anesthesia of the head, it is advisable to use a very dilute solution of eucain, producing at the same time mild hyperemia of the cephalic blood vessels by means of a slightly constricted band placed around the neck.

GENERAL ANESTHESIA

High spinal punctures and all technics attempting to attain total analgesia are always dangerous. With other means of obtaining the same results it is unwise to run the great risk which accompanies such procedures.

Generally speaking, spinal anesthesia is a block anesthesia, but if one resorts to its use for general anesthesia, one should employ the Koster technic, injecting 0.2 or 0.25 cc. of novocaine into the spinal canal at the selected site, with the patient in a semi-Trendelenburg position. Sufficient anesthesia can be obtained for operations on the neck, head and upper limbs. Nevertheless, as emphasized, *the method is a dangerous one, despite meticulous preoperative care.*

ANATOMIC CONSIDERATIONS

Block anesthesia has its own definite indications. It is necessary that the field of operation be within the nerve area to be desensitized. In the lumbar portion of the spine the nerves whose paths are to be blocked are those forming the cauda equina. These nerves emerge through the lumbar intervertebral spaces. But as the Quincke puncture is made, not at the junction of the last dorsal and first lumbar vertebrae, but between the fourth and fifth lumbar vertebrae, the nerves affected in the majority of cases are those beginning with the fourth median lumbar nerve. By practicing "barbotage," it is possible to infiltrate the first lumbar root.

The anterior branches of the first four lumbar and the first four sacral nerves constitute the sacral plexus. The anterior branches of the fourth and fifth sacral, with the coccygeal, form the coccygeal plexuses. Therefore, as a rule, in lumbar anesthesia only the sacral and coccygeal plexuses are desensitized, and only by means of "barbotage" is the lumbar plexus reached.

The distribution of the nerves comprising the cauda equina to the cutaneous

areas is as follows: The first lumbar nerve innervates a band of the abdominal wall parallel to Poupart's ligament, including the suprapubic region, the root of the penis and the superior half of the scrotum. The second lumbar nerve innervates the superior and anterior part of the thigh up to a horizontal line passing through the middle part of the scrotum, while the third lumbar nerve continues from the midportion of the thigh down to the patella—an area of trigonal form. The fourth lumbar nerve supplies the median and lateral surfaces of the thigh, the anterior surface of the knee and the anterior and internal surfaces of the leg, or is Y-shaped. The fifth lumbar supplies the lateral surface of the leg and foot, terminating at the plantar surface of the fourth toe and the dorsal surface of the first toe.

The first sacral nerve supplies the skin of the foot not innervated by the fifth lumbar. The second sacral nerve innervates the posterior surface of the thigh and leg. The third, fourth and fifth sacrals, with the coccygeal, innervate the skin of the gluteal region, the perineum, the anterior part of the penis and the lower half of the scrotum.

As for the viscera, the second, third and fourth sacral nerves innervate the rectum; the first lumbar, the lower end of the ureter; the first four sacrals, the mucosa of the bladder; the fifth lumbar and the first three sacrals, the prostate; the first lumbar, the epididymis. In women the uterus, particularly the cervix, is innervated by the first four sacrals.

In regard to the muscles, the first lumbar nerve innervates the quadratus lumborum, external oblique, transversalis and cremaster muscles, while the second lumbar nerve innervates the psoas minor, iliacus, pectineus, adductor longus and adductor brevis, rectus femoris and gracilis; the third lumbar innervates the psoas, iliac, pectineus, adductors, rectus femoris, obturator externus, gracilis and crureus. The fourth lumbar innervates the psoas magnus, adductor longus, adductor brevis, rectus femoris, obturator externus, crureus, gluteus maximus, gluteus medius, tensor vaginae femoris, obturator internus and the muscles of the anterior part of the leg except the gastrocnemius. The first sacral nerve innervates the gluteus, tensor vaginae femoris, pyramidalis, obturator internus, crureus, muscles of the posterior region of the thigh and muscles of the leg and foot. The second sacral innervates the gluteus maximus, pyramidalis, obturator internus, semitendinosus, crural biceps, gastrocnemius, soleus, flexor digitorum, the muscles of the foot (plantar surface) and the muscles of the perineum. The fourth sacral innervates the levator ani, coccygeal and perineal muscles. The fifth sacral and coccygeal nerves supply the coccygeal muscle.

INDICATIONS FOR USE

It is well to know the distribution of the sensory, visceral and motor paths, in order to modify the technic according to the requirements of the particular operation. In fact, the use of barbotage, when operating on the leg, for instance, makes considerable difference. If barbotage is not resorted to, the sensibility of the anterior surface and lower end of the leg may remain intact with only the skin of the popliteal space being numbed, for the nerves of these teguments are innervated by the lumbar plexus and can become infiltrated without barbotage, if a very diffusible analgesic substance is used. In operations on the abdominal viscera incomplete anesthesia may result from neglecting to practice barbotage or to use a diffusible anesthetic. In operations on the testicles or ovaries, the injected solution must reach the dorsal nerves.

The belief that spinal anesthesia should not be used in obstetrics because it impedes the uterine contractions is in-

correct. The uterus does not derive its nerve supply from either the lumbar or the sacral plexus, those directly infiltrated by the anesthetic. The location of the principal lower medullary centers is as follows: The anal center is at the lower end of the cord, while just above it is the bladder center; the genital center is near the middle of the spinal cord; there are numerous vasomotor and hair erecting centers all along the spinal cord. Therefore, the use of spinal anesthesia is advisable in deliveries by forceps, version and cesarean section. The uterine musculature retains its tonicity. This method of anesthesia has, at the same time, the advantage of obtaining relaxation of perineal muscles—a very important factor during delivery.

Anesthetic. The selection of the preparation used for the anesthetic must be considered. When a high operation is to be performed, percaine should be chosen, while the less diffusible novocaine is to be preferred when analgesia at a lower level is desired.

CONTRAINDICATIONS

The possibility of producing general anesthesia or of injuring the cord contraindicates the use of spinal anesthesia in children, who are very sensitive to all forms of medication, and especially to anesthetics. Advanced age is usually a contraindication to spinal anesthesia because of nervous irritability, faulty elimination and certain organic lesions, such as arteriosclerosis.

Spinal anesthesia is contraindicated in patients suffering from severe lesions or systemic infections, when the cardiovascular and nervous systems are severely affected, and especially in pyemia, where infection of the meninges may result.

ADMINISTRATION

Enemas should not be given preceding the operation, especially when operating on the perineum, because of sphincter relaxation during anesthesia. When no special contraindication is present, the patient may have a cup of coffee or a glass of milk for breakfast.

Morphine for sedation should be given an hour before the operation, while caffeine, sparteine-strychnine, or ephedrin should be administered a little before the operation to counteract cardiac depression in spinal anesthesia. Despite this preoperative care there is a slowing of the pulse rate in the first 10 or 15 minutes, which later becomes normal after the anesthesia diminishes. Prolonged action of the spinal anesthetic on the nerves of the heart leads to the thought that other nerves besides those of the cauda equina have been affected. Actually, the anesthetic becomes diluted in the cerebrospinal fluid and affects the whole nervous system in more or less the same degree. Because of this, various symptoms, such as vomiting, pallor, bradycardia, syncope, rhachialgia, paralysis and retention of urine appear. Their explanation is found in the action of the anesthetic upon the respective nervous centers.

The technic of lumbar puncture is too well known to be here repeated. The importance of using only those substances which are least noxious to the nervous system must be stressed. At present preparations which are diffusible even in high concentrations are used because they are more constant in their action, less toxic and easily eliminated, qualities possessed by novocaine and percaine.

In the use of spinal anesthesia, strict indications and contraindications should be evaluated. One must bear in mind that it is a genuine block anesthesia. Novocaine dissolved in cerebrospinal fluid is the preparation of choice.

SUMMARY

Contraindications and indications for the use of spinal anesthesia are presented, based on the site of the operation and the condition of the patient. It

should be considered as a block anesthesia. Only rarely should this form of anesthesia be used above the diaphragm.

RÉSUMÉ

Quelques observations sur l'anesthésie rachidienne

L'auteur considère les contre-indications et les indications pour l'emploi de l'anesthésie rachidienne, se basant sur l'état du malade et sur le siège de l'opération. Il faut envisager cette anesthésie comme un blocage. Rarement, on y aura recours pour les opérations au-dessus du niveau du diaphragme.

ZUSAMMENFASSUNG

Uber Spinalanästhesie

Indicationen und Contraindicationen für die Verwendung von Spinalanästhesie sind aufgeführt, je nach der Lage des Operationsfeldes und der Verfassung des Patienten. Diese Anästhesieform sollte nur als Blockanästhesie angewandt werden. Ihre Verwendung oberhalb des Zwerchfells sollte nur in Ausnahmefällen erlaubt werden.

SUMARIO

Algunas consideraciones en anestesia espinal

Contraindicaciones é indicaciones para el uso de la anestesia espinal es presentado, basados en la localización de la operación y las condiciones del enfermo. Esta debe de considerarse como anestesia regional ó bloqueo. Solamente en casos raros debe de usarse esta anestesia en operaciones arriba del diafragma.

RIASSUNTO

Alcune considerazioni sull'anestesia spinale

Contra-indicazioni ed indicazioni per l'uso dell'anestesia spinale sono presentate, basate sulla locazione dell'operazione e la condizione del paziente. Dev'essere considerata come anestesia di blocco. Solo in casi rari è permesso usare questa forma di anestesia per operazioni più alte del diaframma.

The Ninth International Congress of Accidents and Diseases of Industry will be held in Rome in 1942. Topics to be discussed are prophylaxis of tetanus, treatment of recent accidental wounds and the use of massage, exercise and mechanotherapy in the treatment of injuries. At the last meeting of the Permanent International Committee of the organization, 18 new members were appointed. Among these were **Dr. Sayers** of the Division of Industrial Hygiene, National Institute of Health, Washington, D. C.; **Prof. Manuel A. Manzanilla,** Mexico, D.F.; and **Dr. Eduardo Bello** and **Dr. Carvallo,** Hospital Arzobispo Loayza, Lima, Peru.

Dr. Louis Hamman, professor of clinical medicine at the Johns Hopkins University, was elected president of the Association of American Physicians at the meeting held in Atlantic City. He succeeds **Dr. Gerald B. Webb,** of Colorado Springs. **Dr. J. H. Means,** of Boston, was chosen vice president.

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The meeting of the sixth International Congress for Experimental Cytology, scheduled to meet in Stockholm from July 25 to August 1, has been indefinitely postponed because of the international situation.

A NEW TECHNIC FOR ARTHRORISIS FOR PARALYTIC TALIPES EQUINUS IN ADULTS

EDUARDO GOMEZ JAUREGUI, M.D., F.I.C.S.
MEXICO CITY, MEXICO

THE frequency of the problem of stabilization of the paralytic foot led Dr. Farill to develop a modified type of arthrorisis, the technic of which is herein described.

Dr. Farill and I have operated on only six cases with this method and sufficient time has not passed for final deductions to be made as to clinical and remote results.

The procedure is carried out in adult patients with paralytic talipes equinus, in whom the strength of the gastrocnemius muscle is conserved, and consists essentially of the following: (1) anteroposterior and lateral stabilization by means of triple arthrodesis (astragalocalcaneus, astragaloscaphoid, calcanocuboid); (2) limitation of anteroposterior movement to the required degree by means of arthrorisis (posterior).

TECHNIC

Spinal anesthesia is used, as a rule; puncture is made between the fourth and fifth lumbar vertebrae and novocaine (0.1 to 1.5 gm. dissolved in 4 to 5 cc. of cerebrospinal fluid) is injected. Any diffusible stimulant, cardiotonic and hypertensive, is injected intramuscularly. Blood is expelled from the limb to be operated upon by gravity, light massage and the application of an elastic rubber constrictor.

The operative field is prepared with tincture of iodine, alcohol and ether. The patient is placed in lateral decubitus. The foot and leg as far as the malleolus are protected by the usual draping method.

The instruments needed are the usual ones employed in general and bone surgery.

An external lateral incision is made, beginning a little below and posterior to the fibula and extending to a point one or two centimeters anterior to the outer borders of the tendons of the extensor longus digitorum. This incision is slightly concave towards the fibula and divides the skin, subcutaneous tissue and dorsal fascia (fig. 1).

By means of hooks the skin and tendons are retracted towards the internal border of the foot and downward. At this point a step from Dr. Lowman's technic is used: A thin, osteoperiostial flap is cut with a wide chisel at the level of the head of the astragalus and scaphoid, parallel to the external surface of the foot, the interarticular lines between the astragalus and the scaphoid, the calcaneus and the cuboid and the astragalus being exposed (fig. 2).

With a narrow chisel, the head of the astragalus, the cartilage of the posterior surface of the scaphoid, the anterior articular surface of the calcaneus and the posterior articular surface of the cuboid are sectioned in the direction marked by the dotted line. Likewise, two parallel cuts are made: A thin layer is sectioned from the lower surface of the astragalus and another, from the upper surface of the calcaneus, in such a way that their surfaces coincide exactly (fig. 4).

The head of the astragalus is freed from cartilage and is then cut in small pieces which are kept temporarily in a small amount of warm normal saline solution.

The patient is now changed to the ventral position and an incision seven centimeters long is made the length of the inner border of the tendo Achillis, beginning with its insertion in the calcaneus. The tendon is retracted outward, without touching its sheath, some of its fat being retained, and the posterior surface of the tibia is exposed (fig. 5).

With either a chisel or a saw a graft measuring four centimeters long and one centimeter wide is taken from the tibia as shown in Fig. 5. This graft is shoved downward, inward to the astragalus and toward the calcaneus, just enough to serve as a buffer and to limit the anteroposterior movements as much as is desired. The graft is sutured to the tibia with kangaroo-tendon, and the hollow space left by the chiseled graft is filled with the small pieces of bone from the head of the astragalus which were previously placed in normal saline solution (figs. 6 and 7).

The wound is closed by suturing in layers; a sterile dressing and a bandage are applied to maintain the proper position (90 degrees in men, a little more in women), followed by a plaster bandage or splint, the knee flexed at 120 degrees being included.

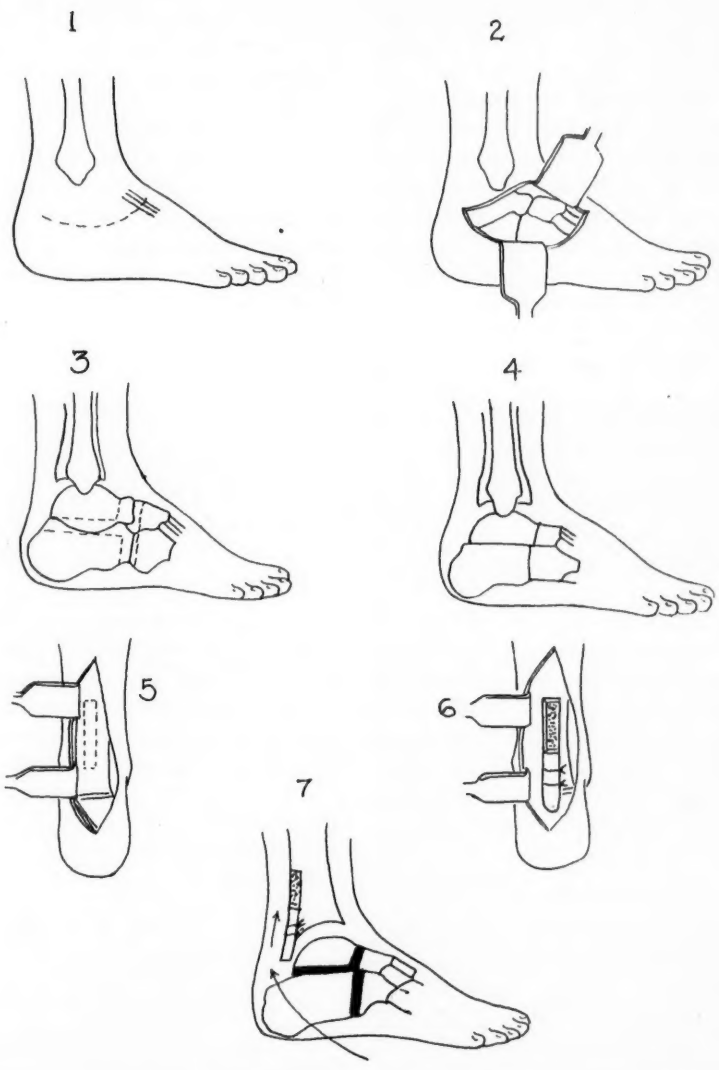


Fig. 1. Lateral incision beginning a little below and posterior to tibula and extending to point 1 or 2 cm. anterior to outer borders of tendons of the extensor longus digitorum. Fig. 2. Skin and tendons retracted with hooks towards internal border of foot and downward.

Fig. 3. Narrow chisel applied in direction of dotted lines is used to section head of astragalus, cartilage of posterior surface of scaphoid, anterior articular surface of calcaneus and posterior surface of cuboid. Fig. 4. Incision 7 cm. in length is made along inner border of tendo Achillis, beginning with its insertion in calcaneus.

Fig. 5. Posterior surface of tibia exposed. Dotted line indicates graft which is removed from tibia with a chisel or saw. Fig. 6. Hollow space left after removal of graft is filled with small pieces of bone previously removed from astragalus. Fig. 7. Graft is shoved downward into bed made by chisel as shown in Fig. 3.

A lateral sketch shows the static effect of the combination of arthrodesis and arthrorisis (fig. 7).

Postoperatively, the patient's general condition should be watched carefully;

heat and Brown's splint may be applied to the foot and leg; if signs of marked compression are present, the plaster splint may be loosened by means of lateral incisions or by cutting a posterior H. Control roentgenograms should be taken. The patient is allowed to walk with crutches in two months, without bearing his weight on the affected foot. Progress in walking will be gradual, depending upon the degree of osteogenesis. Orthopedic appliances will be helpful.

The combination operation described above can be performed easily by surgeons accustomed to this type of work. Theoretically the method has the following advantages: Tenotomy of the tendo Achillis is unnecessary; the graft is strong and remains in its own niche; the graft receives stress longitudinally, and this action, added to that of the bone fragments used to fill the hollow, is osteogenetic (according to Wolf's laws). With time, the graft will increase in strength instead of, as happens in other cases, being resorbed with exercise and the passage of time.

Patients operated upon in this manner are still under observation and study.

SUMMARY

The author describes a new technic for the surgical treatment of paralytic talipes equinus in adults. Arthrodesis and arthrorisis are combined, with modifications. Triple arthrodesis (astragalocalcaneus, astragaloscaphoid, calcanocuboid) is employed to effect anteroposterior and lateral stabilization; posterior arthrorisis is used to produce limitation of anteroposterior movement to the required degree.

RÉSUMÉ

Arthrorise: Une nouvelle technique pour le pied bot équin paralytique chez l'adulte

L'auteur décrit une nouvelle technique pour le traitement chirurgical du pied bot équin chez l'adulte. Il combine, avec quelques modifications, l'arthrodèse et l'arthrorise. Pour obtenir la stabilisation antéro-postérieure et latéral, l'auteur a recours à une triple arthrodèse: astragalo-calcanéale, astragalo-scaphoïde et calcanéo-cuboide; l'arthrorise postérieure nous assure la limitation, au degré désiré, du mouvement antéro-postérieure.

ZUSAMMENFASSUNG

Eine neue Technik für die Arthrodese im Pes Equinus Talus Paralyticus des Erwachsehen

Der Auter beschreibt eine neue chirurgische Behandlungs-methode. Arthrodese und Arthrorisis sind mit gewissen Veränderungen vereinigt. Dreifache Arthrodese wird verwandt um antero-posteriore und laterale Stabilisation zu erzielen. Posteriore Arthrodese wird verwandt um eine Beschränkung der antero-posterioren Bewengung bis zu einem gewünschten Mass zu beschränken.

SUMARIO

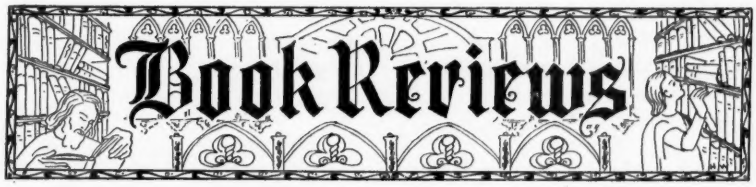
Una técnica nueva para artrorisis por tálipes equinus paralítico en Adultos

El autor describe una técnica nueva para el tratamiento quirúrgico de tálipes equinus paralítico en el adulto. Artrodesis y artririsis son combinadas, con modificaciones. Artrodesis triple (astragalocalcaneos, astragaloescafoidea, calcanocuboidea) es empleada para afectar estabilización antero-posterior y lateral; artrorisis posterior es usada para producir limitación de movimientos al grado requerido.

RIASSUNTO

Una tecnica nuova per artrorisi, per piede storto paralitico equinus negli adulti

L'autore descrive una tecnica nuova per il trattamento chirurgico del piede storto paralitico equinus negli adulti. L'artrodesi e l'artrorisi sono combinati con modificazioni. L'artrodesi tripla (astragalo-calcaneo, astragalo-scafoide, calcanocuboide) è usata per effettuare stabilità anteroposteriore e laterale; l'artrorisi posteriore si usa per produrre una limitazione del movimento anteroposteriore al grado voluto.



A Century of Belgian Poetry (1830-1930). By Francisco Castillo Nájera, Surgeon, Man of Letters and Diplomat, Present Ambassador of Mexico in Washington. Pp. 548. Editors: Brussels, Labor, and Madrid, M. Aguilar.

NAJERA, in this work, achieves a veritable triumph of talent and perseverance in which he shows his prowess as historian, critic, biographer and bibliographer in over 250 translations from Belgian poets. His translations reveal skilled knowledge of the poetical melody of the French language, faithfully portrayed in Spanish without losing the charm of the original text.

Castillo Nájera demonstrates in his work facility and genius in letters, science and diplomacy.

Versatility in the arts and sciences has been shown by surgeons like Billroth, that formidable leader of major surgery who attracted the medical world to his clinical amphitheatre, where he demonstrated his skill with the scalpel, and who relaxed in private musicales at his residence, where he displayed his skill on the violin.

The surgeon, in fulfillment of his serious and at times life-saving tasks and responsibilities, may appear foreign or cold to the sensibilities and emotions of poetry, music and the beaux-arts, and yet history records attainments in the arts and sciences by the masters of the operating room.

When medicine was in the domain of the philosophers, the astronomers and the mathematicians, the gifts of poetry, music and the arts were by-products of the master minds which encompassed universal knowledge.

The travels and diplomatic experiences of Castillo Nájera have been world-wide and unique, affording him rare opportunities to satiate his literary proclivities and, in the field of diplomacy, to acquire understanding of the intricacies of political problems which he successfully meets with tact and sagacity.

The historical sketch of the poetical expression in the French language and poetical expression in the Flemish language are engaging and of rare beauty.

Those conversant with the French and Spanish languages will find in this work of Castillo Nájera an historical gathering of lyric gems over the century just closed (1830-1930) that cannot be perused in any other work like this, for it doesn't exist.

DESIDERO ROMAN

The Surgery of Injury and Plastic Repair. By Samuel Fomon, Ph. D., M.D., Formerly Major, Medical Corps, U. S. Army. Price $15. Pp. 1,400, with 925 illustrations. Baltimore: William Wood & Company, 1939.

IN an attempt to encompass within one volume the entire literature on traumatic surgery, the author has combed the leading periodicals and publications and from this material he has

(*Please turn to page 280*)

BONE GRAFT OF THE MANDIBLE WITH PROSTHETIC OBJECTIVE

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MEMBERS of the dental profession are indebted to the World War for the fact that they have been compelled to solve many prosthetic and faciomaxillary problems. Much is owed to J. Lebedinsky, dental surgeon of the hospitals of Paris and Chief of the Prosthetic Institute, and to M. Virenque, Intern of the hospitals of Paris, from whose experiments and technic excellent results have been obtained.

The present war reminds us that the number of wounded men in each combat was so great that the necessity arose to replace those lost at the front and to reestablish physically the injured as quickly as possible so that they might return to the front, or so that later they, as invalids, would not be a burden to the state.

Bone-grafting in general has been carried on in Mexico for the past thirty years with results which were anything but uniform. Dr. Rosendo Amor is pessimistic over the results of bone-grafting and bases his opinions upon his clinical observations, regardless of the operative technic employed. In reviewing the benefits of bone-grafting, failures often are overlooked. In order to avoid disappointments, it is essential to know the causes which determine failure and the elements which are indispensable for success. It is necessary to know as far as possible whether the grafted bone will survive and whether its total survival is certain or problematical.

Whether only the cortical layers of the bone remain alive and the medullary portions of the transplant necrose before they become vascularized is a moot question. I am of the opinion, based upon my own observations, that the majority of grafts do survive.

The survival of the transplanted bone depends principally upon its age and the perfection of its contact with the adjacent tissues. As a rule, grafted bone adheres to the contiguous tissues, and, if the total graft comprises all the layers of the bone, including the periosteal and endosteal components, it is logical to conclude that it has a greater opportunity to survive.

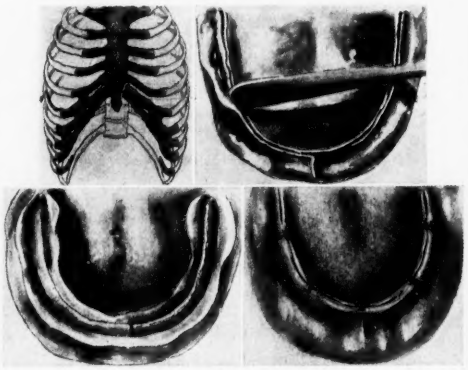

Fig. 1. Upper left. A piece of bone about 0.5 cm. in thickness is removed from superior border of sixth rib.

Fig. 2. Upper right. Incision made along alveolar border of maxilla to receive bone graft.

Figs. 3 and 4. Lower left and right. Suturing of incision with fragments of graft in correct position.

The dental surgeon is at times confronted with the necessity of making a denture, especially a lower one, when the entire alveolar process has regressed to such an extent that the prosthesis cannot possibly remain in place.

I have devised a method of treating these cases by replacing the loss of the

alveolar process with a bone-graft, using the technic described below.

The operation consists essentially in taking pieces of bone from the superior border of the sixth rib (fig. 1), about one-half centimeter in thickness, and of whatever length is desired; this transplant is then grafted to the mandible. The curve of this bone segment is similar to that of the mandible. The loss of the transplant from the chest is of no moment to the patient.

The graft is adjusted beforehand and cut into fragments which are made to conform to the curve of the maxilla. An incision is then made along the alveolar border (fig. 2), the edges of the wound are separated and the two fragments of bone are inserted in the wound, care being taken to incise the periosteum so that the graft will be in contact with the mandible. The operation is concluded by suturing the incision with the fragments of the graft in correct position (figs. 3 and 4).

SUMMARY

The author describes his method of compensating for regression of the alveolar process to obtain support for a prosthesis. The operation consists in removing pieces of bone from the superior border of the sixth rib and grafting them to the mandible. The graft must include all layers of the bone and must be in contact with the mandible.

RÉSUMÉ

Les greffes osseuses du mandibule pour objectif a prothetique

L'auteur décrit sa methode de compenser à la régression de l'apophyse alveolaire et de créer un support pour une prothèse. Il enlève un segment du bord supérieur de la sixième côte. Ce segment est greffé dans le mandibule. Le greffon doit renfermer toutes les couches de l'os et doit être en contact avec le mandibule.

ZUSAMMENFASSUNG

Knochenimplantat in den Unterkiefer mit Prothesenwirkung

Verfasser beschreibt seine Methode der Bildung eines Halts für Prothesen in Fällen von Retrognathie des Alveolarfortsatzes. Die Operation besteht in der Entfernung von Knochenstücken vom obern Rande der sechsten Rippe und Einlegung in den Unterkiefer. Das Transplantat muss alle Knochenschichten enthalten und dem Unterkiefer dicht anliegen.

SUMARIO

Injerto de hueso de la mandibula con objetivo de prótesis

El autor describe su método de compensación por regresión de los procesos alveolares para darle un soporte por prótesis. La operación consiste en tomar pedazos de huesos del borde superior de la sexta costilla é injertandolos en la mandibula. El injerto debe de incluir todas las capas del hueso y debe de estar en contacto con la mandibula.

RIASSUNTO

L'innesto dell'osso della mandibola con l'oggettivo protesi

L'autore descrive il suo metodo di compensazione per il regresso del processo alveolare per provvedere un sostegno per una protesi. L'operazione consiste del rimuovere pezzi di ossa dall'orlo superiore della sesta costa e dell'innestarli alla mandibola. L'innesto deve includere tutti stratti dell'osso e devè essere in contatto con la mandibola.

SURGICAL TREATMENT OF PELVIC PERITONITIS

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THE increase in the frequency of pelvic peritonitis is due to the increase in the number of criminal abortions. The fatal results are due either to delay, or to imprudent haste, in operating. My observation of cases treated during the last eight years in my gynecological service has lead me to summarize the indications for surgical treatment in pelvic peritonitis of genital origin.

It is not necessary to describe the well-known symptoms or to differentiate this condition from appendicitis, intestinal occlusion, ileitis (especially terminal) or torsion of a genital tumor, because these can be easily identified. There are, however, two pathologic conditions with which pelvic peritonitis may often be confused. The following case histories are presented to illustrate this point.

CASE REPORTS

A woman giving a history of gonorrhea was examined in my service in December, 1936, because of an acute syndrome of the lower abdomen, accompanied by severe general symptoms. Locally rigidity and severe pain were present in the hypogastrium and iliac fossa. The vaginal cul-de-sacs appeared to contain a resistant mass. A diagnosis of suppurative pelvic peritonitis was made and a colpotomy was performed. No pus was present, but instead an irregular mass occupied the floor of the pelvis; this mass extended backwards and to the left and was definitely fluctuating to the right. A vaginal hysterectomy by hemisection was then performed, Doyen technic, whereupon the mass was found to be a fibroma; suppurative salpingitis was present on the right side.

Two months later another patient was brought to my service with symptoms similar to those presented by the previous case, the difference being that the neoformation occupied the entire pelvic cavity. Colpotomy proving unsuccessful, laparotomy was performed, at which a large, embedded fibroma was found, accompanied by bilateral suppurative salpingitis, more marked on the left than on the right.

DIFFERENTIAL DIAGNOSIS

The marked clinical similarity between acute pelvic peritonitis and suppurative salpingitis, when the latter appears in women who also have fibromas, should be kept in mind in order that one may be prepared for the necessary surgical procedure.

Ruptured tubal pregnancy is another condition with which pelvic peritonitis may be confused. To avoid error in these cases, in addition to a urinary prolan test one should obtain a careful history, especially of the early stages of the condition. In tubal pregnancy internal hemorrhage causes tachycardia and hypotension; in pelvic peritonitis this does not occur.

TYPES OF PELVIC PERITONITIS

Pelvic peritonitis of genital origin may be divided into three groups corresponding to the anatomic lesions which are manifested by different symptoms and to the surgical procedures required.

A. Hyperseptic Type. In the hyperseptic type the peritoneum and cellular tissue of the true pelvis are infiltrated

with serum and the connective tissue is gangrenous. Under these conditions the circulatory, respiratory and nervous symptoms which predominate bespeak the profound intoxication of the organism. Abdominal manifestations are less impressive and pelvic manifestations are absent except for increased resistance perceived on palpating the abdomen.

B. Serous Type. Serous pelvic peritonitis forms the second group. In this type there is formation of false membranes which enclose a number of small collections of serum. These give rise to general manifestations of a less serious nature than do the others and present, in addition, a frank reaction in the infraumbilical region. Spontaneous pain, rigidity and meteorism are limited to the hypogastrium and the iliac fossae and indicate freedom from involvement of the upper part of the abdomen. Pain provoked by pressure increases towards the pubic symphysis and is more severe when compression is released (Blomberg's sign). Upon bimanual examination a high, utero-adnexal induration is felt, in which the presence of fluid is doubtful.

C. Purulent Type. In plastic purulent pelvic peritonitis the symptoms are localized in the lower abdomen and the pelvis. The most characteristic symptom is a more or less voluminous plastic induration in the cul-de-sac. This may be of liquid consistency, resistant or fluctuating.

TREATMENT

In these cases the surgeon should endeavor to distinguish between the case in which an impetuous operation would lead to death and the case in which a prompt intervention may be a life-saving measure.

In hyperseptic pelvic peritonitis, sustained general and medical treatment may be sufficient. Operation is contraindicated in these cases. A woman with hyperseptic pelvic peritonitis following an abortion was brought to my service in April, 1936, during the night and operated upon by my assistant. Laparotomy, cleansing, disinfection and canalization (Mickiulicz technic) were performed; death occurred four hours later. I have seen many similar cases and I believe that it is best to refrain from operating in these instances.

In cases of serous peritonitis, or those of the second group, in which general symptoms are less marked, the surgeon must exercise watchful waiting, and only in the case of aggravation should one proceed to perform laparotomy, with adequate drainage. These cases usually prove fatal and only slight hope may be offered even by prompt surgery. Death usually occurs suddenly.

Finally, in plastic purulent pelvic peritonitis, comprising the third group, surgical interference by immediate posterior colpotomy is indicated and the results are usually excellent.

SUMMARY

Differentiation between pelvic peritonitis and diseases which resemble it (appendicitis, intestinal occlusion, ileitis and torsion due to tumor) usually is relatively simple. The exact type of pathology is somewhat more difficult to determine. Careful history taking is of utmost importance. Three types are recognized: (1) the hyperseptic, (2) the serous and (3) the plastic purulent. In the hyperseptic, medical treatment may be sufficient. In the serous, surgery is advisable only in severe cases; in the plastic purulent variety, surgery yields excellent results.

RÉSUMÉ

Le traitement chirurgical de la péritonite pelvienne

Il est facile de différencier la péritonite pelvienne des maladies qui lui re-

semblent (appendicite, occlusion intestinale, iléite et torsion due à un neoplasme). Il est plus difficile de reconnaître le type exacte de la péritonite qui afflige le malade. Ce diagnostic determine le traitement qu'on doit adopter. Obtenez du malade des renseignements précis. La péritonite est ou hyperseptique ou séreuse ou plastique et purulente. Pour la péritonite hyperseptique un traitement médical peut suffire; pour la péritonite séreuse on opère que dans les cas graves. Le traitement opératoire donne d'excellents résultats dans les cas de péritonite plastique et purulente.

ZUSAMMENFASSUNG

Chirurgische Behandlung in Beckenperitonitis

Differentialdiagnose zwischen Bekkenperitonitis und ähnlichen Erkrankungen (Blinddarmentzündung, Darmverschluss, Ileitis, und Torsion infolge von Tumor) ist ziemlich leicht. Es ist etwas schwieriger den Typ der Peritonitis zu erkennen, damit eine richtige Behandlung eingeleitet werden kann. Dies kann durch eine genaue Krankengeschichte erleichtert werden. Drei Arten können unterschieden werden: eine Hyperseptische, eine Seröse, und eine plastisch-eitrige. In der Hyperseptischen kann interne Behandlung genügen; in der Serosen ist Chirurgie nur in sehr schweren Fällen anzuraten und in der Plastisch-Eitrigen gibt Chirurgie ausgezeichnete Erfolge.

SUMARIO

Tratamiento quirúrgico de la pelviperitonitis

La diferienciación entre la pelvi-peritonitis y enfermedades que se paresen (apendicitis, oclución intestinal, ileitis y torciones de tumores) es relativamente facil. Es mas dificultoso determinar el tipo exacto de la peritonitis presente asi que tratamiento propio sea instituido. Esto es hecho mas facilmente si una historia clínica cuidadosa se ha hecho. Tres tipos son reconocidos: (1) hiperséptico, (2) el seroso y (3) el plástico purulento. En el hiperséptico, tratamiento médico puede ser suficiente; en el seroso, cirugía es aconsejada en los casos severos; en el purulento plástico, circugía produce resultados excelentes.

RIASSUNTO

Trattamento chirurgico nella peritonite pelvic

Il differenziare fra la peritonite pelvica e malattie che la somigliano (appendicite, occlusione intestinale, ileite e torsione dovuta a un tumore) è relativamente facile. E un po' più difficile determinare il tipo esatto di peritonite presente, in modo che si possa stabilire il trattamento giusto. Questo si fa più facilmente se si prende una storia esatta. Tre tipi si riconoscono; l'ipersettico, il seroso e il purulento plastico. Nell 'ipersettico, il trattamento medico può essere sufficiente; nel seroso la chirurgia è utile solo in casi gravi; nel purulento plastico, la chirurgia produce risultati eccellenti.

THE NEXT INTERNATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD IN MEXICO CITY, MEXICO, AUGUST 10-14, 141.

PELVIC CELLULITIS

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EACH school of medicine tries to create its own terminology according to its own studies and investigations. Certain terms which are meaningful to some convey only vague ideas to others. For example, to the French school hepatic insufficiency has been a fruitful field of hypothetical work, which, through clinical, biological and pathological study, has been the foundation for all studies in hepatology.

The term cellulitis is to some only an abstract entity within whose imprecise boundaries there would be room for a great deal of pathology, but to certain pathologists it implies clinical facts and biological concepts by means of which far-reaching therapeutic effects are obtained.

Connective tissues are the fundamentals of our economy, and although they vary from the least differentiated (embryonal) tissue to the most highly specialized (osseous or cartilaginous) tissue of the adult, they are elements of the same tissue group, and their morphological divergencies are due only to chemical changes of a local order. The entire reticulo-endothelial system is but a form of cellular elements of connective tissue origin.

The histologic characteristic of connective tissue is its formation from collagenous fibers with a system of small elastic fibers anastomosing among themselves to form a fairly dense network which gives it the characteristic of elasticity. In the interstices of their network are the cells, some being autochthonous, the aborigines of this tissue whose activity and nutrition are restricted; others, of a great nutritive and elaborative capacity, are usually mobile and active in phagocytosis, their biologic character enabling them to transform themselves from one type to another (phagocytes, macrophages, histiocytes, etc.). They have the physiologic characteristic of being bathed by the interstitial lymph which individualizes the economy through its peculiar physicochemical composition. Each individual has the reactions occasioned by his interstitial lymph, since it is the environment in which the cells live and are fed and at whose expense they exist.

Considered physiopathologically, the connective tissue alone possesses sanguineous capillaries which are in intimate contact with the elements derived from the blood (polynuclear, secretory elements, lymphocytes, etc.), and in close interchange with the pathogens which reach them from it. Not a single process of inflammation takes place except through the modifications undergone by the capillaries and the interstitial lymph, and consequently the connective tissue.

Surgical pathology is to a great extent connective tissue pathology, since this tissue is charged with the task of repair and suffers most in the process of destruction. What is called inflammation of the epithelial tissues (nervous centers, divers glands, etc.), is but the inflammation of the connective tissue which acts as a support and as a nutritive base for the nervous and glandular cells, and, in the peritoneum, for the endothelial lining supported and nourished by the subjacent connective tissue which gives it its physiologic and pathologic character.

Therefore, when speaking of pelvic cellulitis, we cannot get away from the

concept of a process which is substantially developed in the connective tissue structure of the peritoneum or in the subjacent connective tissue.

A surgeon should also be a physiologist, for, according to the words of Leriche and Policard, "He who would understand the pathologic must begin by learning the normal state and its variations. The more a surgeon experiments on the necessity for knowing the why and the wherefore of conditions, the more he will search into pathologic physiology for guidance in therapeutics."

Our therapeutic ideas must be obtained from previous physiologic reasonings, to gain ultimate confirmation clinically.

Clinically and pathologically pelvic cellulitis is classified as neoplastic and inflammatory, even when the former is complicated by the latter.

CELLULITIS OF NEOPLASTIC ORIGIN

Pelvic cellulitis of neoplastic origin differs from other forms in differential diagnosis and treatment. Not all neoplastic lesions grow by infiltration from neighboring tissues, since all benign tumors of interstitial or central growth develop by the increase in volume of their own mass with repulsion of the surrounding tissues, in which case the connective tissue resembles benign cellulitis of inflammatory origin without infection. In cases of malignant neoplasms, tumors of the connective tissue are generalized by the blood stream, metastases invading the walls of the veins to the extent of causing the formation of emboli at different points which frequently respect the connective tissue — that exuberant web, rich in lymph, so often affected by the malignant neoplasias of epithelial type whose cells engraft themselves successively in the interstices of the supporting connective tissue, carried down by the lymph current, invading the lymphatic parts (Sampson Handley's penetration) to the extent of producing cancerous lymphangitis, adenitis and embolism. Helbit even calls it lymphophilic cancer in opposition to hemophilic cancer, which directly invades the blood stream by primary embolism. These are the only cases deserving to be called neoplastic cellulitis. In Mexico the conception of pelvic cellulitis has tended to be circumscribed: The inflammatory processes are regarded in an eminently clinical spirit, even when based on the physiopathology of the interstitial connective tissue, although some neoplastic cases could be included, especially malignant tumors of epithelial origin, which by their pathogenesis resemble inflammatory cellular infiltration.

Mexican clinicians have advanced the knowledge of pelvic cellulitis scientifically and therapeutically in an endeavor to understand the physiopathology of connective tissue.

CELLULITIS OF INFLAMMATORY ORIGIN

Pelvic cellulitis has many clinical aspects, from the sudden and fulminating type with acute and grave symptoms, to the insidious invasion which appears like a recurrence of a previous pelvic inflammation.

Bacterial invasion which produces acute pelvic cellulitis blocks the reticular structures; these are bathed in lymph, absorbing toxic and microbial products, the results of cellular disintegration. Their pathogenic action is increased by the dilatation of the capillaries which, bathed in a lymph of an altered physicochemical constitution, are unable to bring about nutritive changes in the fixed cells and in those of lesser mobility. The bacteria, surrounded by this plasma, are destroyed; capillary occlusion impedes the ingress of mobile cells, while the migratory cells aggravate the condition.

Interstitial edema drowns the cells, so to speak, and by compressing the nerve endings, provokes diffuse pain.

A state of profound suffering may ensue because of vasoconstriction by sympathetic action, capillary stasis, embolisms in situ and localized necrosis, due to insufficient filtering through the injured endothelial walls of the peritoneum.

Etiologically streptococci, the gonococci and anaerobic bacteria, together or alone, are the instigators of pelvic cellulitis. In order of frequency the hemolitic streptococcus, alone or associated with the B. perfringens, heads the list, followed closely by the colon bacillus.

Most of the cases follow puerperal infections, neglected uterine ruptures and postabortive sepsis. Many, however, occur postoperatively following resection of the rectum for cancer, when a suture tears loose, and after septic gynecologic operations. A perirectal pelvic cellulitis may follow perineal repairs when needles have been passed through the walls of the rectum, following supravaginal hysterectomy; it probably represents the extension of an infection from the endocervix or of infected cancer when it follows a hysterectomy for cancer. It may follow pelvic appendicitis with gangrene and perforation, or perforated diverticulitis, or severe pelvic traumatisms with rupture of the hollow viscera of the pelvis.

These infections may result in complications, such as infectious endocarditis, accompanied by general systemic symptoms. All possible means, such as antitoxins and anti-infectious injections, opsonic therapy, immunization injections, etc., should be employed; ample irrigation of the affected areas; and, if an initial focus of infection is safely accessible, extirpation, if possible, with a minimum of trauma, electrosurgery being the procedure of choice. Despite our few therapeutic resources, many of these desperate cases have been saved. Only those grave and fulminating infections with tendencies to heart failure result fatally in 24 to 48 hours.

The type of pelvic cellular infection which is by far the most frequent and for which the term pelvic cellulitis is reserved is rarely a fatal disease, being announced by rigors and fever and general physical manifestations.

Pelvic cellulitis may be a complication of a preexisting pelvic condition, originating in order of frequency from: (1) the female genitalia; (2) the rectum and its neighboring tissues; (3) the extra pelvic organs abnormally introduced into the pelvis; (4) the male genital apparatus; (5) the urinary apparatus.

INFECTIONS OF FEMALE GENITALIA

Cellulitis originating from the female genital apparatus is most frequent and is usually caused by the streptococcus, with the gonococcus and the colon bacillus as accompanying organisms. The infection may be parametric or periadnexal and may occur subsequent to childbirth or abortion with infection, as a complication of gonococcic infection, or as the result of curettement or cauterization. The inflammatory process may lead to sclerosis or suppuration. Sclerosis develops after a prolonged period of hyperemia, which changes the mature connective tissue into embryonal tissue, a process whereby vasodilations, by attentuated but persistent inflammatory reaction, accelerate their cycle towards sclerosis or maturity. This results in adhesions, chronic infiltration and plastic cellulitis which often agglutinates all the affected organs into a single mass, twisting their vascular pedicles and imprisoning the more mobile organs (ovaries, oviducts, etc.) in the elastic web of the new tissue.

Suppuration develops when the mobile elements are very numerous — a multitude of polymorphonuclear leucocytes surrounding the focus. These elements are so numerous in the peritoneum and are of such nutritive and elaborative capacity that when they are destroyed they free ferments of the proteolytic type which bring about histolysis of the

connective tissue. Various types of phlegmons of the hypogastric sheath, broad ligament, pelvirectal space, etc., result — processes which are no longer pelvic cellulitis but the consequences of special conditions which have imprinted a destructive character upon the cells and tissues. These represent necrosis of the connective tissue, while cellulitis per se is a more or less prolonged state of inflammation, which leads either to sclerosis, resolution of the focus, or to suppuration. In cellulitis of the pelvic organs, therefore, the process will be found more diffuse; inflammation will appear in connective tissues exceptionally rich in lymph spaces, representing a prolonged phase of the cycle of inflammation.

The question arises as to whether lack of suppuration means that pelvic cellulitis is not present or whether it is less likely to be present in cases which develop adhesive processes without suppuration.

In infiltrations involving the perirectal or periuterine tissues many days pass before the process becomes diffuse or before suppuration can be detected. This phase represents pelvic cellulitis. When necrosis or suppuration results, it is because a cellulitic process has been added to another cause — that of capillary embolisms and necrosis of the tissues through vascular obstruction. Inasmuch as pelvic cellulitis may involve all the pelvic organs, abscess formation often occurs in the broad ligament, the infundibulum and the ischiorectal fossa.

In pelvic cellulitis due to interstitial edema, humoral alterations, etc., the obvious treatment points to correct stasis by drainage, perhaps, by means of a posterior colpotomy. Where suppuration is manifest in specific organs, extirpation should be considered. Diathermy and moist heat give excellent results in many cases. Streptococcic infections may be treated by chemotherapy (sulfonethylmethane) in large doses, 5 to 8 g. a day in fractioned doses, every four hours, always given with sodium bicarbonate. Other measures are specific or nonspecific vaccination with aseptic pus; transfusions or immuno-transfusions; or serum therapy in large doses. Dr. Francisco Reyes, who has used soluble mercurochrome with great success, reports that it is of great value in these cases, although care must be exercised in the handling of large doses.

Surgery is effective in cases in which a focus of infection is somewhat distant from the pelvis, such as an ulcerous cervicitis, causing inflammation of the tissue of the pelvis. With elimination of the focus of infection, the pelvic cellulitis usually clears up. Electrosurgery is the best treatment for these cases. Electrocoagulation of an infected cervix, drainage of the uterine cavity, extirpation of Bartholin's glands or ample excision of abscessed periurethral glands should be detected and properly remedied.

INFECTIONS OF INTESTINES

The second group of cases of pelvic cellulitis includes affections of the rectum, such as proctitis, strictures, infected carcinoma, phlebitis, hemorrhoids, fistulas, diverticulitis of the colon, tuberculosis and rectocolic polyps.

In nearly all these infections, it is through the lymphatic channels that microorganisms (streptococci, colon bacilli and staphylococci) invade the rectal cellular tissues and the perirectal tissues, or, following the branches of the hemorrhoidal artery, reach the lymph nodes and the connective tissue surrounding these.

Therapeutic measures should be general and should include the extirpation of the focus of infection. Vaccines and chemotherapy are indicated in the presence of streptococci and staphylococci. Operative treatment should aim at extirpation of the causal lesion. Infected hemorrhoids should be removed, with ample drainage of the perianal tis-

sue; fistulas should be débrided with the electric knife and the rectum should be dilated. In cases of lymphogranulomatosis, cancer and diverticulitis, proper therapy should be instituted.

It is questionable whether sigmoidodiverticulitis should be operated upon during the cellulitis period or whether this should be done after first resorting to medical treatment. According to Hailes, Ransome, Rea, etc., if intestinal obstruction is not complete, the surgeon should not operate for pelvic cellulitis. In the presence of obstruction, gangrene or perforation of an infected diverticulum an artificial anus should be made. Leucocytogenous preparations only increase the stasis and the interstitial edema.

COMPLICATIONS

The coexistence of acute inflammation of the right adnexa with appendicular pathology is relatively common. There may be inflammatory appendicular lesions and ovarian changes (congestive, sclerosing or cystic) which may be relieved by adequate treatment, such as correcting the circulatory disorder by ovarian sympathectomy and freeing of adhesions. This should be kept in mind when operating, and conservative surgery should be performed except when degenerating lesions of the ovary and oviduct are present. In all cases of acute appendicitis which simulate pelvic cellulitis or which complicate it by the abnormal situation of the appendix, immediate surgery is necessary.

The important thing to be emphasized is that the cellular process of a purely congestive type is alleviated by active vasodilation and by stimulation of the sympathetic system. No intervention is indicated, at least at first. Where intestinal occlusion threatens, an immediate operation is indicated, once a definite diagnosis has been made. For like reasons the same conduct is to be followed in mesenteric infarct, whether or not it is complicated by pelvic cellulitis.

The uterine mucosa is a tissue which may develop in unusual places. The pathologic complex is known as endometriosis. This tissue responds to the endocrine stimulus in exactly the same manner as the normal mucosa of the uterus. At each menstruation there are pelvic pain, discharge, manifestations of a mild degree of cellulitis, peritoneal irritation and even hemorrhage. Sometimes during menstruation painful nodules may be felt at the level of the ovaries and a marked inflammatory reaction is present. The distinctive characteristic of these disorders is that they disappear completely between menstrual periods, only to reappear at the next period. Women between the ages of 30 and 40 years who have suffered previously from menometastasis or have undergone operations on the genital apparatus are affected by this disorder. Since the condition is caused by mechanical engraftings of uterine mucous, treatment should be surgery or radiotherapy; if surgery is resorted to, it would suffice to extirpate the grey or blue-colored nodules which are present in the ovary and which are frequently confused with cystic formations, like those scattered at the level of the ligaments or in the pelvic infundibulum.

Pelvic cellulitis, through thrombophlebitis of the plexuses of the prostate, is the most frequent cause of grave genitourinary septic states in the male.

Trauma, whether the result of a direct wound or of rupture of hollow viscera in severe injuries of the pelvis (fracture, contusion, etc.) may provoke pelvic cellulitis of an acute type in which development is rapid and dramatic and the symptoms varied. The condition is relieved by treating the lesions occasioned by the trauma.

SUMMARY

The author explains the development of pelvic cellulitis on the basis of the

histology, physiology and physiopathology of the pelvic organs and tissues. The condition may arise from disorders of (1) the female genitalia, intra and extra-pelvic; (2) the rectum and its surrounding tissues; (3) extrapelvic organs abnormally introduced into the pelvis; (4) the male genitalia; (5) and the urinary apparatus. The development of each type of disorder and the treatment recommended are described. All wounds of hollow viscera, caused by injury or rupture of the hollow viscera, should be treated surgically to prevent cellulitis from developing.

RÉSUMÉ

La cellulite pelvienne

L'auteur nous présente le développement de la cellulite pelvique en se basant sur l'histologie, la physiologie et la physiopathologie des organes et des tissus pelviens. La cellulite pelvienne peut avoir son origine dans les organes génitaux intra- ou extrapelviens de la femme; dans le rectum et les tissus environnants; dans des organes normalement extrapelviens mais déplacés dans le bassin; dans les organes genitaux mâles; dans l'appareil urinaire. Le développement et le traitement de chacun de ces desordres est décrit. Toute plaie des viscères creux demande un traitement chirurgical afin de prévenir l'infection du tissu cellulaire du bassin pelvien.

ZUSAMMENFASSUNG

Beckenbindegewebsentzündung

Verfasser erläutert die Entwicklung der Beckenbindegewebsentzündung an Hand der Histologie, Physiologie und Physiopathologie der Beckenorgane und Gewebe. Der Zustand kann entstehen auf der Basis von Störungen in 1) weiblichen Genitalien, innerhalb und ausserhalb des Beckens, 2) Mastdarm und umgebendes Gewebe, 3) extrapelvine Organe, die ungewöhnlicherweise ins Becken verlagert wurden, 4) männliche Geschlechtsorgane, 5) Harnogane. Die Entstehung der verschiedenen Formen von Störungen werden beschrieben mit der einzuschlagenden zweckmässigsten Behandlung. Alle Wunden von Gedärmen nach Unfall, oder Risse in den Eingeweiden müssen chirurgisch angegangen werden zwecks Verhütung einer Bindegewebsentzündung.

SUMARIO

Celulitis de la pelvix

El autor explica el desarrollo de la celulitis de la pelvix basandose en a histología, fisiología y fisiopatología de la pelvix, organos y tejidos. La condición puede presentarse de desordenes de (1) los genitales femeninos, intra y extrapelvicos; (2) el recto y los tejidos alrededor; (3) organos extrapelvicos introducidos abnormalmente dentro de la pelvix; (4) los genitales masculinos; (5) y el aparoto urinario. El desarrollo de cada tipo de desorden y el tratamiento recomendado son descrito. Todas las heridas de las viceras huecas, causadas por lesiones y roturas, deben de ser tratadas quirurgicamente para evitar desarrollo de celulitis.

RIASSUNTO

La cellulite pelvia

L'autore spiega lo sviluppo della cellulite pelvica sul baso della istologia, fisiologia, e fisiopatologia degli organi pelvici e tessuti. La condizione puo provenire da disordini (1) delle parti genitali femminili, intra e extra pelviche; (2) il retto ed i suoi tessuti circostanti; (3) organi extra-pelvici in modo anormale introdotti nel bacino; le parti genitali maschili; (5) e l'apparecchio urinario. Lo sviluppo de ognuno di questi tipi di disordine e la cura raccomandata, sono descritti. Tutte ferite dei visceri cavi, causate da lesione o rottura dei visceri cavi, devono essere curate chirurgicamente per prevenire lo sviluppo della cellulite.

EXTRAUTERINE PREGNANCY WITH A LIVING CHILD AT TERM

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CLINICAL reports of extrauterine pregnancies are of value because they furnish additional information regarding this interesting condition and because augmentation of knowledge makes the physician better able to diagnose the condition correctly. Statistics show that extrauterine pregnancies are occurring with increasing frequency. Internal hemorrhage is a dreaded complication which, when severe and not promptly arrested, may cost the patient's life within a few hours. Misleading symptoms result in errors in diagnosis and, on occasion, disaster.

I treated the following case recently; the patient was referred to me by another physician, the diagnosis being placenta praevia.

CASE REPORT

A. S., aged 30, of Pueblo, Mexico, entered the hospital for treatment June 25, 1936. The family and personal history presented nothing of importance. The patient had had four normal pregnancies and no miscarriages. Her last menstrual period began October 1, 1935; the first three months of gestation were uneventful. For eight days in January, 1936, the patient complained of generalized severe pain in the lower part of the abdomen and lumbar region, accompanied by a small amount of vaginal bleeding and by fever and asthenia. The patient was treated for threatened abortion. Gradually the pain decreased and finally disappeared. From then on her progress was uneventful until May 1, when she fell on her abdomen; severe pain followed but was of short duration, although it returned with increasing fetal movements.

The attending physician tried during the first days of June to change the position of the fetus by external maneuvers, but without success. On June 24 vaginal bleeding set in, and at times the pains simulated those of labor. The patient was first seen by me the following day.

Examination revealed tenseness of the abdominal wall, tenderness in the right iliac fossa and hyperesthesia of the skin. The cephalic pole of the child was at the level of the right hypochondrium and the caudal pole in the left iliac fossa, with the neck turned to the left. The fetal heart sounds were heard in the superior right abdominal quadrant. On vaginal examination, the cervix was found cylindrical and incompletely softened, with little dilatation of the cervical canal, which was pushed back posteriorly. The cul-de-sac was occupied by a uniform soft mass. The patient's face displayed anguish. Her temperature was 101.3° F., pulse 130 and respirations 30.

The diagnosis of placenta previa centralis was confirmed, complicated by some obscure abdominal process (appendicitis?). Low cesarean section was advised. The operation was performed under spinal anesthesia. On opening the abdomen a brown fluid containing greenish particles, somewhat loosely attached to the intestine, was found, showing the presence of generalized peritonitis. While the abdominal fluid was being aspirated in an attempt to locate the appendix, the umbilical cord was encountered. The baby was found inside the abdominal cavity, and immediately after it was extracted it began to breathe. Part of the membranes covering the infant were removed with the infant; those remaining were removed immediately afterwards. The uterus was somewhat enlarged (5 cm. to the pubis) and the placenta was adherent to the floor of the posterior cul-de-sac of Douglas in a cavity, the anterior wall of which was formed by the anterior surface of the sacrum and the investing membranes. The placenta was removed in its entirety and the place of its insertion packed with gauze. Three drains were left in situ. At the conclusion of the operation the patient received a liter of salt solution.

The following morning she was extremely ill, with Hippocratic facies and rapid pulse. She had not lost much blood. A great quantity of serum discharged, completely saturating the gauze packing.

Two blood transfusions, one in the morning and another in the evening, were given, and more salt solution injected. From then on steady improvement was noted. The drains

were removed 72 hours after the operation. The patient left the hospital August 2.

The infant weighed six pounds, two ounces (2.8 kg.). It was cyanotic and had plastic malformations of the head. It lived only 17 hours.

It was almost impossible to make a correct diagnosis, although the examination was made by a competent and experienced physician. The fetal parts and the reflex movements were not clearly perceived, nor were the cardiac sounds audible, even though the abdominal walls were thin. Vaginal examination gave the impression that the placenta was being felt through the lower uterine segment, an excusable misinterpretation, since the placenta occupied the rectouterine pouch. It was not possible to palpate the uterus pushed to the posterior side of the pubis on account of the pain induced by palpation and also because it was feared that bleeding would be provoked.

Of the 17 cases of extrauterine pregnancy which I have observed, 6 were lithopedions (these sometimes develop in extrauterine pregnancies), the skeleton of the fetus being eliminated through the rectum, vagina and bladder. Cases of this type have been treated by Drs. Calixto Rojas, Rafael Lucio, Juan María Rodriguez, Manuel T. González and Francisco Reyes. In 4 cases (those observed by Drs. Juan María Rodriguez, Alfonso Erdozain, Francisco de P. Chacón and Alberto López Hermosa) the condition was discovered at autopsy. Of the 7 remaining cases, in only 2 was the correct diagnosis made; in the other 5 the diagnosis was made only at operation. In 2 cases total removal of the placenta was done; partial removal was done in the remaining cases, with marsupialization. Four of the patients died and three babies lived.

In the case herein reported, the classical characteristics of ectopic pregnancy were absent, not only because the different parts of the fetus could not be felt but also because the pregnancy developed almost normally until the last month of gestation. In the majority of cases the patients were extremely pale, lost weight and suffered from acute abdominal syndromes, with frequent abdominal pain which did not disappear even after treatment and rest. Moreover, in the majority of cases complete softening of the cervix, a normal occurrence at the end of pregnancy, did not take place. Finally, the cervical canal was only slightly patulous.

SUMMARY

In the case herein reported, a diagnosis of placenta previa, complicated by abdominal pathology, was made in a multipara, aged 30, at term. Abdominal section revealed a living fetus in the abdominal cavity with the placenta in the posterior cul-de-sac. The baby weighed six pounds, two ounces and was living, but it was cyanotic and had plastic malformations of the head. It died after 17 hours. The mother made an excellent recovery. Of 17 cases of extrauterine pregnancy observed by the author, 6 were lithopedions and 4 were observed at autopsy. In the 7 remaining cases, the correct diagnosis was made before operation in only 2; 4 mothers died and 3 babies lived.

RÉSUMÉ

Grossesse extra-utérine avec enfant vivant à terme

Dans ce cas, il avait été posé le diagnostic de placenta previa compliqué par un état pathologique abdominal. La malade, une miltipara, avait trente ans. La grossesse était à terme. Une césarienne révéla dans la cavité abdominale un foetus vivant. L'enfant pesait six livres; il était cyanotique et présentait des malformations plastiques de la tête. Le placenta était inséré dans le cul-de-sac postérieur. L'enfant vecut dix-sept heures. La mère fit une excellente convalescence. Dans dix-sept cas de gros-

sesses extra utérines observés par l'auteur six était des lithopédions, quatre furent des trouvailles d'autopsie. Dans les sept autres cas le diagnostic correct ne fut posé avant l'opération que dans deux cas; quatre de ces sept mères moururent; trois enfants vécurent.

ZUSAMMENFASSUNG

Extrauteringravidität mit ausgetragenem lebendem Kinde

Im vorliegenden Falle war bei einer 30-jährigen Mehrgebärenden die Diagnose Placenta praevia kompliziert durch eine Bauchpathologie am Ende der Schwangerschaft gestellt worden. Der Kaiserschnitt ergab ein lebendes Kind in der Bauchhöhle mit der Plazenta im hintern kleinen Becken. Das Kind wog sechs Pfund, und war am Leben. Es was zyanotisch und hatte eine plastische Deformität am Kopfe. Es starb nach 17 Stunden. Die Mutter erholte sich glatt. In 17 Fällen von Bauchhöhlenschwangerschaft des Verfassers 6 waren Lithopädion und 4 wurden bei der Autopsie festgestellt. In den übrigen 7 Fällen war die korrekte Diagnose nur in 2 vor der Operation gestellt worden. 4 Mütter starben und 3 Kinder lebten.

SUMARIO

Embarazo extrauterino con un niño vivo hasta termino completo

En el caso presentado aqui, un diagnostico de placenta previa, complicado con patología abdominal, fue hecho en una multipara, de 30 años de edad cuando estaba á termino. La cesaria reveló un feto vivo en la cavidad abdominal con la placenta en el fondo de saco de Douglas. El niño pesó seis libras y estaba viviendo, pero estaba cianótico y tenia malformaciones de la cabeza. Este murio 17 horas despues. La madre hizo un recobramiento excelente. De los 17 casos de embarazo extrauterino observados por el autor, 6 eran litopedios y 4 fueron observados en la autopsia. En los 7 casos restantes, en solamente dos el diagnostico fue correcto antes de la operación; 4 madres murieron y tres niños vivieron.

RIASSUNTO

Gravidanza fuori l'utero con un bimbo vivente ad intiero termine

Nel caso presentato qui dentro, una diagnosi di placenta previa, complicata per patologia addominale, fù fatta in una multipara, di trent'anni, a termine. La sezione Cesarea riveló un feto vivente nella cavità addominale con la placenta nel fondo di sacco posteriore. Il bambino pesava sei libbre ed era vivente ma era cianotico e aveva malformazioni plastiche della testa. Morí dopo diciassette ore. La madre fece una guarigione eccellente. Di 17 casi di gravidanza fuori l'utero, osservati da l'autore, 6 furono litopediones e quattro furono osservati a l'autopsia. Nei 7 casi restanti, in soltanto 2 casi la diagnosi corretta fù fatta prima l'operazione; quattro madri morirono e tre bambini vissero.

REQUESTS FOR INFORMATION AND APPLICATIONS FOR ASSOCIATE MEMBERSHIP, MEMBERSHIP OR FELLOWSHIP IN THE INTERNATIONAL COLLEGE OF SURGEONS SHOULD BE ADDRESSED TO MR. RALPH E. OSBORNE, BUSINESS SECRETARY, 2543 PARKWOOD AVE., TOLEDO, OHIO.

COLLEGE PERSONALITIES: MEXICAN CHAPTER

DR. FRANCISCO CASTILLO NÁJERA, F.A.C.S., F.I.C.S.

Dr. Francisco Castillo Nájera, Ambassador to the United States from Mexico, was born November 25, 1886, in the city of Durango. He was graduated March 6, 1913, in medicine from the Faculty of Medicine of the University of Mexico.

He studied urology in the clinic of Joseph in Berlin, (1924) urology under Legueu and abdominal surgery under Duval, Hartmann and Gosset, in the Faculty of Medicine of the University of Paris, 1925. In addition to this, he studied political and social science (Paris) and general archeology and Americana (Brussels).

Professional Activities. He was director of the Juarez Hospital of Mexico (1918-1919), chief of the Medico-Legal Council of the Federal District (1919-1921), voting member of the Council of Public Health (appointed in 1932), and voting member of the National Reclamation Commission (1926-1927). His military appointments have included chief of the Health Service of the First Brigade of Infantry of the Main Body of the Army of the Northwest (1915) and of the Third Division of the Northwest (1915-1917); director of the military hospitals of León, Torreón, Nogales and Mexico, at various periods from 1915 to 1927; director of the Military Medical school and chief of the Military Health department of the Armed Forces (1920); member of the Revision Commission of the Certificates of Service of the Military Medical Body (1919-1920) and of the Advisory Commission of Military Hygiene (1918-1920). At present he holds the rank of Brigadier General in the Service of Military Health of the Mexican Army. His teaching appointments include the following: Honorary professor of general pathology (1913) and professor of legal medicine (1920-1922 and 1924) in the Faculty of Medicine of the University of Mexico; professor of general pathology (1927) and of urology (at various periods from 1917 to 1927) in the Military Medical school; professor of urology for postgraduates (1927), Faculty of Graduate Studies, University of Mexico.

Nájera was representative and delegate of the Academy of Medicine, of the Medico-Legal Body of the Federal District and of the States of Tabasco and Sonora at the fifth, sixth and seventh National Medical Congresses held in Puebla (1918), Toluca (1920) and Saltillo (1922), and to the First Conference on Venereal Diseases held in Mexico (1924); personal representative of the president of the Republic at the Tenth National Medical Congress held in Morelia, 1932; vice president of the Second Mexican Congress of Tabardillo, Mexico, in 1921; member of the First Mexican Child Congress, 1921, and General Secretary of the Commission organized subsequently; first vice president of the Seventh Latin-American Medical congress, Mexico, 1930; president of the Mexican Delegation, International Assembly of the International College of Surgeons, New York, 1939.

Commissions and Decorations. He was commissioned by the Mexican Government to the following international congresses and conferences: Panamerican Conference of Venereal Diseases, Washington, 1920; American Association of Health, New York, 1921; Thirteenth Congress of Hydrology and Climatology, Lyons, 1927; Medical Meetings of Brussels, 1928-1932; Sixth International Congress of Military Medicine and Pharmacy, The Hague, 1931; Eighth International Congress of Military Medicine and Pharmacy, Madrid, 1933; Ninth and Tenth Meetings

of Military Documentation, Liège, 1932 and 1934; member of the Permanent Commission for the Military Medical Congresses, 1933 and 1935. Besides this, he has, as president of the Mexican Delegation, met with various congresses on disarmament, protection of artistic and scientific institutions and historic monuments, on municipal governments and cities, the milk industry, international agreement and the signing of friendship treaties, etc., assuming on various occasions the character of plenipotentiary. He was representative of the Mexican Government to the League of Nations, 1933-1935.

He has held various honorary commissions in the League of Nations. He was president of the 73rd, 74th and 75th periods of the Court; vice president of the 14th Assembly, 1933; president and vice president of various commissions, subcommissions and conferences, 1933 to 1935; and president of the extraordinary assembly on the question of Chaco, 1934.

He was a member of the Board of Health of Pekin (1923); honorary professor of the School of Medicine of Varsovia (1933); private counsellor of the Sovereign of Monaco regarding a Congress on the Humanization of War (1934); president and vice president of various international meetings and conferences in various countries; and patron of the Smithsonian Institute, Washington.

His diplomatic service includes appointments as envoy extraordinary and plenipotentiary to China (1922-1924), Belgium (1927-1930), Holland (1930-1932), Sweden (appointed in 1932), France (1933-1935) and Austria (1934-1935); ambassador extraordinary and plenipotentiary to the League of Nations (1934) and at present, since February, 1935, to the United States of America.

Medical Societies. In Mexico he is a member of the Mexican Medical Association, National Athenaeum of Sciences and Arts (honorary), Mexican Society of Geography and Statistics (active), Academy of Surgery, Academy of Medicine, Academy of Sciences.

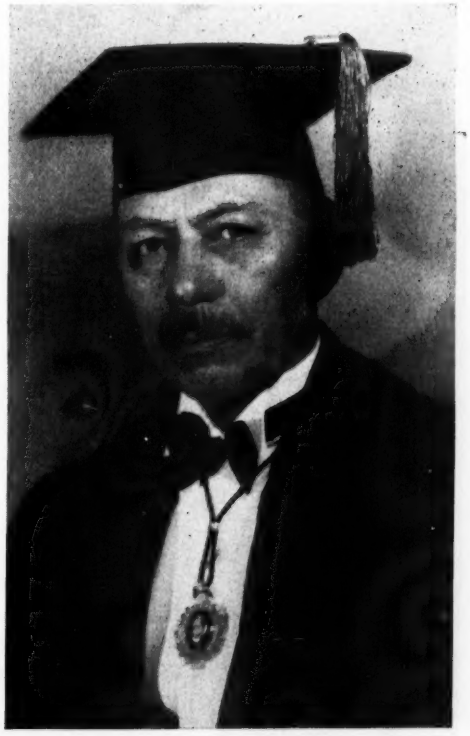
He is a member of the following foreign societies: International Society of Surgery, Belgian Society of Urology, American College of Surgeons (fellow), Association of Military Surgeons of the United States (honorary), International College of Surgeons (honorary), Academy of Medicine of Lima, Academy of Sciences and Arts of Cadiz, and others.

Decorations. He has been decorated with the First Class Medal of Military Merit of Mexico; Grand Crosses of National Orders of Belgium, Bolivia, Colombia, Cuba, Chile, China, Ecuador, Haiti, Holland, Panama, Peru, Portugal, Santo Domingo; Grand Official insignia of the Legion of Honor of France and of the Spanish Republic; Centenary Medal of Belgium (the only foreigner who possesses it by special royal decree); and other decorations of national and foreign organizations.

Publications. He has had published scientific articles and other works in various Mexican and foreign periodicals in addition to reports of national and international congresses, and books and pamphlets, theses and conferences, as well as literary and historical articles, verses and poems too numerous to list here.

GONZALO CASTAÑEDA, M.D., F.I.C.S.

PRESIDENT AND NATIONAL REGENT
OF THE MEXICAN CHAPTER



Dr. Gonzalo Castañeda was graduated in 1898 from the Medical Faculty of Mexico. Following this, he did postgraduate work in Europe.

At present he is physician to the Monte and Pachuca Royal Mining Company; professor and director of the Science Institute of the State of Hidalgo; and deputy to the congress of the same state.

In the city of Mexico, he has been surgeon of the General Hospital and of the Military Hospital and for 25 years chief surgeon of the Hospital de Jesús.

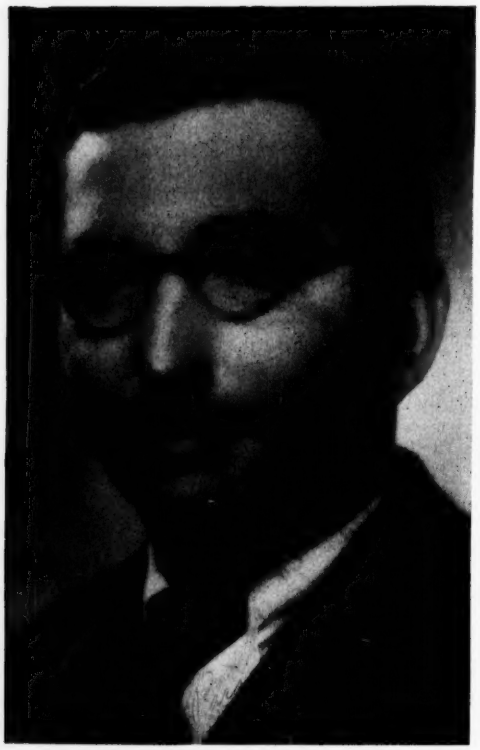
At the University of Mexico he has held a professorship of Abdominal and Clinical Surgery in the Postgraduate Faculty and the following professorships in the Medical Faculty: of Surgical Technic on the Cadaver; of Therapeutic Surgery; and at present of Clinical Surgery, a course of which he is also in charge in the Medical Military School. In addition, he has been Chief of Surgical Teaching and Sub-Director of the Medical Faculty. He is a member of the Academy of Professors and a member of the University Council.

He has also been president of the Academy of Medicine, first president of the Academy of Surgery, president of the Mexican Medical Society, first general secretary of the Syndicate of Physicians and Surgeons of the Federal District, vice president of the Franco-Mexican Medical Society, member of the Academy of Science of Mexico and Havana, member of the Japanese Red Cross, member of the Society of Military Physicians, honorary surgeon of the General Hospital, honorary professor of the University of Michoacan, honorary member of the Mexican Society of Traumatology and honorary member of the International College of Surgeons. He has been consultant of the Medical Service of the National Railroad of Mexico and has the rank of Lieutenant-Colonel in the Medical Corps of the National Army.

He has written five books about clinics, in general and in particular, and numerous scientific articles which have been published in the medical journals.

DR. MANUEL A. MANZANILLA, F.I.C.S.

NATIONAL REGENT OF MEXICAN CHAPTER



MANUEL A. MANZANILLA, M.D., F.I.C.S., Honorary Fellow and National Regent, Mexican Chapter of the International College of Surgeons.

Dr. Manzanilla was born in the city of Campeche. He was graduated in medicine from the Faculty of Medicine of the University of Mexico in 1924. Thesis, "Study of Acidosis," lauded in France (*Archivos Médicos Franco Hispano Americanos*, organ of the Office of Foreign Relations of the Faculty of Medicine of Paris, IV, No. 8, October, 1925, pp. 626-628).

Courses of Specialization. Gynecology and abdominal surgery in the Faculty of Graduate Studies. Later the Graduate School of Philosophy and Letters, University of Mexico, for three years. Assistant at the Hospitals of Paris and Rome, 1935.

Professional Activities. Surgeon and adjunct surgeon to the chief surgeon of the National Railroads of Mexico (1925-1928). Chief of the Gynecology Service of the Consultorio 4 (1925-1928), Chief of the General Surgical Service of the Consultorio 4 (1925-1932), Surgeon of the General Hospital (1927-1936), Director of the Consultorio 5 (1933-1936). Adjunct of operative technic in the Faculty of Medicine, University of Mexico, 1927-1932.

Congresses and Commissions. Representative and delegate of Public Assistance: Tenth National Medical Congress, Morelia, 1932. Delegate of the Academy of Surgery: First Mexican Congress of History, Oaxaca, 1933; Medical Meetings of the Centenary of the Faculty of Medicine, Mexico, 1933; First National Assembly of Surgeons (Official Chairman), Mexico, 1934; various international congresses in 1935. Delegate of the Syndicate of Mexican Surgeons of the Federal District: First National Congress of Pro-

fessionalists, Mexico, 1933. Commissioned especially by the Academy of Sciences before various academies and scientific societies in Europe, 1935-1936. Delegate of the Government of the State of Campeche: Second National Assembly of Surgeons, Mexico, 1936, and third National Assembly of Surgeons, Mexico, 1939. Delegate of the National Athenaeum of Sciences and Arts: First National Congress of Hygiene and Medicine of Industry, Mexico, 1937. Representative and Delegate of the International College of Surgeons, Mexican Chapter: International Assembly of Surgeons, New York, 1939.

Commissions in Foreign Countries. Representative and delegate to the Fourth International Congress of Hospitals, Rome, 1935; Eleventh International Child Conference, Brussels, 1935; Seventh International Conference of Accidents and Diseases of Industry, Brussels, 1935; First International Congress of Gastroenterology, Brussels, 1935; Eighth International Congress of Accidents and Diseases of Industry, Frankfort-on-the-Main, 1938. Commissioned to study public assistance in Europe, 1935-1936.

Honorary Offices and Commissions: Secretary of the Academy of Surgery, 1933-1936. International Society of Gastroenterology: voting member of the Mexican National Committee of the First Congress, Brussels, 1935; vice president of Mexican National Committee of the Second Congress, Paris, 1937, and of the Third Congress, London, 1940. Permanent International Committee for the Study of Accidents of Industry: vice president of the Mexican National Committee of the Seventh Congress, Brussels, 1935; Mexican member of the Permanent International Committee, Frankfort-on-the-Main, 1938. International Society of Surgery: Mexican delegate to the International Committee (original organization of the Mexican National Committee), Cairo, 1935. International College of Surgeons: National Regent for Mexico, Geneva, 1936; General Secretary for Mexico of the Executive Council of the College, Philadelphia, 1938; co-editor of the JOURNAL, Chicago, 1938.

National Societies. Mexican Medical Association, Society of Physicians of the General Hospital, Yucatan Medical Society; National Athenaeum of Sciences and Arts (active); Mexican Society of Geography and Statistics (active); Academy of Surgery; Academy of Sciences.

Foreign Societies: International Society of Gastroenterology, founder; International Society of Surgeons, titular; International College of Surgeons, honorary.

Honorary Distinctions: First prize for honoring the memory of Manuel Acuña, Seventh National Medical Congress (*Revista Medicina*), Saltillo, 1922. Diploma of Honor, Tenth National Medical Congress, Morelia, 1932. Special invitation from the President of the Republic of Venezuela, Panamerican Medical Congress, Caracas, 1933. Gratitude from the government and from the people of Cuba, centenary of Carlos J. Finlay, 1933. First prize of the meeting of Garci-Crespo, First National Assembly of Surgeons, Garci-Crespo, 1934. Mexican member of the Permanent International Committee for the Study of Accidents of Industry, Frankfort-on-the-Main, 1938. Honorary member, International College of Surgeons, Geneva, 1939.

Writings. Various scientific works, books, pamphlets, national and international congresses, special and encyclopedic reviews, national and foreign; articles, chronicles and discourses on scientific, historical, literary and artistic themes.

DR. MIGUEL LÓPEZ ESNAURRÍZAR, F.I.C.S.

TREASURER AND NATIONAL REGET OF MEXICAN CHAPTER

Born in Mexico City, March 23, 1900. Graduated in medicine from the Faculty of Medicine of the University of Mexico. Thesis, "Technic of Intestinal Sutures," commented on in the foreign press by Prof. Jean Louis Fauré, in *La Presse Médicale,* Paris.

Specialization Courses. Gynecology and abdominal surgery, Faculty of Graduate Studies, later philosophy and letters in the Graduate School, University of Mexico, for three years; graduated in the specialty October 26, 1926. Thesis, "Elements of Gynecomastotherapy." Resident at the Cancer Institute, New York, 1931. Assistant in the hospitals of Paris and London, 1932, and in Paris and Rome, 1935.

Professional Activities. Policlínica del Cinco de Mayo: Chief of the department of surgery and gynecology, from 1923 to the present. Beneficencia Española: Visiting physician, 1939. Dr. López Esnaurrízar Sanitarium: Director, from 1938 to the present. University of Mexico: Adjunct professor in the Faculty of Medicine, 1923-1935; professor of clinical propedeutic surgery in the same school, from 1936 to the present.

Congresses and Commissions. Mexican delegate to the Seventh International Congress of Accidents and Diseases in Industry, Brussels, 1935; First International Congress of Gastroenterology, Brussels, 1935; and to the International Assembly of the International College of Surgeons, New York, 1939; in 1932 attended the International Congress of Surgery held in Madrid.

Honorary Offices and Commissions: Academy of Surgery: Secretary, 1936-1938. Permanent International Committee for the Study of Accidents in Industry: Secretary of the Mexican National Committee of the Seventh Congress, Brussels, 1935. International Society of Gastroenterology: Secretary of the Mexican National Committee of the Second Congress, Paris, 1937, and vice president of the same committee for the Third Congress, London, 1940. International College of Surgeons: National Regent for Mexico, New York, 1939; treasurer Mexican chapter, 1939.

National Societies. Mexican Medical Association, Academy of Surgery.

Foreign Societies: International Society of Gastroenterology, International Society of Surgery, International College of Surgeons.

Honorary Distinctions. Prize of the Federal Department of Labor of Mexico, monograph contest, 1934. Director of the Section of Gynecology of the *Revista Mexicana Medicina.*

Writings. Textbook, "Tratado de Clínica Propedéutica Quirúrgica," Uteha, Mexico, 1939; "Elementos de Ginecomasoterapia" (unpublished); various scientific works in the Mexican and foreign journals, and reports of national and international congresses.

DR. FRANCISCO FONSECA GARCIA, F.I.C.S.

SECRETARY OF MEXICAN CHAPTER

Born in Mexico City. Graduated in medicine from the Faculty of Medicine of the University of Mexico (1925).

Specialization Courses: Gynecology and abdominal surgery (postgraduate courses of the General Hospital, 1928).

Professional Activities: Public Assistance: Chief of the Surgical Service of the General Hospital. Francesa Charity: Chief Surgeon of the Service of the Sanatorium of the Francesa Red Cross. Professor of clinical surgery in the Faculty of Medicine, University of Mexico.

Honorary Offices and Commissions: Academy of Surgery: Voting member of the Board of Directors, 1936-1938. International College of Surgeons, Mexican Chapter: Secretary of the National Executive Council, Mexico, 1939.

National Societies: Mexican Medical Association, Society of Physicians of the General Hospital; Medical Society of the General Hospital, active; National Athenaeum of Sciences and Arts, active; Academy of Surgery.

Foreign Societies: International College of Surgeons, fellow.

Honorary Distinctions: Officer of the *Academia de la Republica Francesa.*

Writings. Scientific works in various reviews and periodicals, national and foreign.

DR. DARIO FERNANDEZ FIERRO, F.A.C.S., F.I.C.S., F.I.C.A.

Born in Puebla City, December 17, 1883. Graduated in medicine from the Faculty of Medicine of the University of Mexico, 1910.

Specialization Courses. Gynecology and abdominal surgery (Pozzi, Jayle and Fauré), surgical therapeutics (Hartmann and Ockenzy), otorhinolaryngology (Castex), surgery of the nervous system (Sicard and Babinski), in the Faculty of Medicine of the University of Paris, 1910-1911; surgery of the neck, in the Kocher clinic, Berne, 1911-1912.

Professional Activities: Military Health Department: Civil surgeon of the Military Hospital of Mexico, 1913-1915. Public Assistance: Surgeon of the General Hospital, from 1914 to the present. University of Mexico, Faculty of Medicine: prosector of descriptive anatomy, 1913-1916; professor of descriptive anatomy, 1917-1925; professor of therapeutic surgery, 1926 to the present.

Congresses and Commissions. Representative and delegate from the Public Assistance (General Hospital) to the Second National Assembly of Surgeons (official chairman), Mexico, 1936. Delegate of the Mexican Government to the Seventh Panamerican Medical Congress, Havana, 1938.

Honorary Offices. Specialty Regent in General Surgery, Mexican Chapter of the International College of Surgeons, National Executive Council, Mexico, 1939.

National Societies. Mexican Medical Association, Society of Physicians of the General Hospital; Medical Society of the General Hospital, active; Academy of Surgery; Academy of Medicine.

Foreign Societies. International Society of Surgery; International College of Anesthetists, fellow; American College of Surgeons, fellow; International College of Surgeons, fellow.

Writings. Scientific works, including original technics, published in various Mexican and foreign reviews, besides reports of national and international congresses; articles and discourses in different foreign and Mexican periodicals.

THE NEXT INTERNATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS WILL BE HELD IN MEXICO CITY, MEXICO, AUGUST 10-14, 1941.

(*Continued from page 280*)

selected the newest and most standardized surgical methods of plastic repair. Included in this single volume are translations and excerpts from the works of English writers. Special surgery of the neck, trunk and extremities are omitted. The most elementary details are described, such as the incision, proper excision of tissue, rearrangement for suturing, types of sutures and suture material, wound dressings, tissue transplants and grafts. More than 400 pages are devoted to the pre- and postoperative care of the patient, fluid, acid and salt balance, anesthesia and shock. The greatest emphasis is placed on the surgery of the nose. The 22 chapters deal with operations in general, tissue transplantation, wounds, burns, the cranium, the eyelid, the auricle, the maxillofacial region, the lip, cleft-lip and cleft-palate, the mandible, the salivary glands, surgical affections of the skin and plaster encasements and prostheses. The impression of too much redundancy is perhaps gained. The voluminous bibliographies should prove of special interest to the research worker.

A.

Cardiovascular-Renal Disease. By Laurence W. Smith, M.D., Edward Weiss, M.D., Walter I. Lillie, M.D., Frank W. Konzelmann, M.D., and Edwin S. Gault, M.D. Pp. 227. New York: D. Appleton-Century Co., 1940.

THIS work is a fine correlation of the clinical, pathologic, ophthalmologic and laboratory findings in cardiovascular-renal disease. It is based on material awarded the Frank Billings gold medal at the scientific exhibit of the annual meeting of the American Medical Association, San Francisco, June, 1938. The importance of fundus studies in this disease is stressed. Two plates in color, black and white illustrations, charts and tables in outline form present the important findings. The bibliography is adequate.

HERBERT A. SACKS

The Principles and Practice of Ophthalmic Surgery. By Edmund B. Spaeth, M.D., Associate Professor of Ophthalmology in the Graduate School of Medicine, University of Pennsylvania, Philadelphia. Cloth. Price, $10. Pp. 835, with 1,035 illustrations. Philadelphia: Lea & Febiger, 1939.

THIS textbook of over 800 pages is a most welcome addition to the already existing literature on ophthalmic surgery. The author not only describes the methods he himself prefers as a surgeon but also the procedures of many other surgeons which serve the same purpose. Advantages and drawbacks of each method are carefully explained. Moreover, many valuable technics of examination (e.g., Walker's method of localization of retinal tears in retinal detachment, gonioscopy, Barkan's method) and operations are quoted verbatim from the original publication. This is of utmost value because it saves the reader from searching the literature.

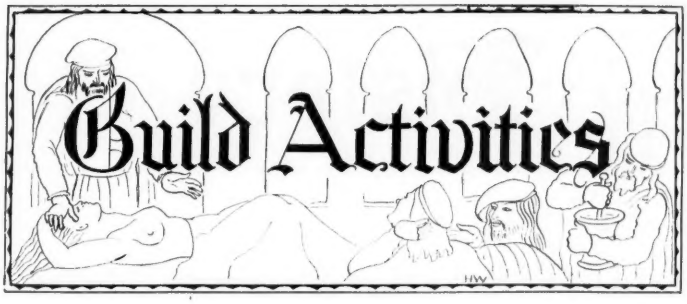
The material presented is so extensive that details cannot be discussed here. Most of the illustrations are elucidating, especially those describing individual maneuvers during certain intraocular operations. The size of some of the photographs is rather small and the photographic detail might stand a little improvement here and there.

Max Herzog

Synopsis of Regional Anatomy. By T. B. Johnston, M.D., Professor of Anatomy, University of London, Guy's Hospital Medical School. Fourth edition. Price, $4.50. Pp. 462, with 17 illustrations. Philadelphia: Lea & Febiger, 1939.

THIS is one of the most excellent books on the subject. It is by far more than a "synopsis." It discusses many details that are not found even in some of our standard anatomies. This reviewer feels that so valuable a book that has so much "meat" warrants explanatory diagrams or a few drawings. On page 3 the terms "clavipectoral fascia" and "costocoracoid membrane" are used synonomously. Did the author mean to give this impression? On page 14 the supraspinatus muscle is discussed. We believe that this all important structure could have been stressed with an additional practical example of function. On page 53 the boundaries of the femoral ring are given, the posterior boundary being considered the pubic bone when in reality this bone is covered by the pectineus muscle in this area. Might not the mention of this muscle let the surgeon know that soft tissue will be met before reaching the pubic bone? Throughout the book italicized words and phrases are used to emphasize important points. This reviewer believes this is an excellent idea. On page 179 the statement is made that internal hemorrhoids are a result of varicosities of the superior, middle and inferior rectal veins. We wonder if the author meant to imply that all three sets of these veins aid in the formation of internal hemorrhoids. A very cleverly outlined glossary is found in the front of the book giving both B.N.A. and revised

(*Please turn to page 286*)



NEBRASKA GUILD ORGANIZED

Dr. Edwin C. Henry, of Omaha, was elected president of the Nebraska Study Guild of the International College of Surgeons at the organization meeting held May 13 in the University club at Lincoln, Neb. **Dr. R. C. Olney,** of Lincoln, was elected secretary.

Plans were made for the first scientific meeting scheduled for the last week in May in Omaha, with clinics at the Douglas County hospital in the forenoon and luncheon at the Omaha Athletic club, followed by round table discussion. At Creighton University Medical school lectures are contemplated on "Later Concepts of Anatomy and Physiology" by representatives of the faculties of the University of Nebraska and Creighton University Schools of Medicine. Dr. Henry, who is a member of the surgical faculty of Creighton University, was appointed chairman of the program committee.

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NEW MEXICO GUILD

The New Mexico Study Guild held its second meeting May 27 at the St. Joseph's hospital, Albuquerque, N. M. **Dr. W. R. Lovelace** conducted a surgical clinic in the morning. This was followed by a round table conference on the points presented at the clinic. The Guild meeting was held just preceding the meeting of the New Mexico State Medical Association.

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NEW ENGLAND STATES GUILD

Lively discussion characterized the four-hour scientific meeting of the New England States Guild of the International College of Surgeons, held March 27 at the Hospital of St. Raphael, New Haven, Conn. A "wet" clinic was held in the morning, followed by luncheon at the Union club. At the afternoon meeting, Dr. Joseph Linde, president of the Connecticut State Medical Society and health officer of New Haven, gave the address of welcome. Papers were presented by **Drs. James Gettings, Dennis O'Connor, A. J. Mendillo, William German** and **Robert Nesbit,** of New Haven; **Dr. Edward Kirschbaum,** of Waterbury, Conn.; and **Dr. Andrew McQueeny,** of Bridgeport, Conn.

COLONEL FIELDING H. GARRISON (1870-1935)

ON THE OCCASION OF THE FIFTH ANNIVERSARY OF HIS DEATH

SOLOMON R. KAGAN, M.D.

BOSTON

DR. Fielding H. Garrison, a pupil of the great Dr. John S. Billings, was an outstanding figure in medical history and bibliography.

He was born in Washington, D. C., on November 5, 1870. His ancestors were French Huguenots. His great, great grandfather, John Garrison, was born in Virginia in 1740. The musket which he used during the Revolutionary War was preserved for years. Colonel Garrison's great grandfather, Samuel Hudson, was born in Maryland in 1760. He was a scholar, a *bon vivant* and a lover of adventure. Garrison's father, John Rowzee Garrison II (1835-1905), was a most just man who for a number of years filled the position of Deputy First Comptroller in Washington, D. C., and later that of Auditor to Porto Rico. From his father Fielding inherited certain Scotch traits and from his mother a French temperament. He was most fortunate in having parents who, recognizing his ability, did their utmost to aid in its development. A deep affection existed between Fielding and his mother and he found unending delight in her vivacity and wit. His father, however, of whom he was very proud, had the greater influence on his life, especially during his boyhood. Fielding told his cousin, Mrs. E. J. Price, that the example set by his father had been a constant incentive to him. The traits that made for Fielding's greatness, his intellect, industry and tenacity of purpose, were inherited from his father. His talent for writing was a heritage from his Garrison ancestors. His father had it to a marked degree, although his busy life in other pursuits prevented its development.

Garrison as a boy was slender, sandy-haired and blue-eyed and enjoyed excellent health. He was a lover of the forests, through which he tramped in endless search for chestnuts and chinquapins, and of all animals, both domestic and woodland. Despite his outward reticence and shyness and his precocious cleverness, he was possessed of a gamin-like sense of humor and was at times mischievous, as shown by an incident related by his cousin, Mrs. Price, concerning one of his customary summer visits to the Garrison farm in Virginia. Mrs. Price had an enormous, snow white pet cat named Rip, which was the pride of her life. Young Garrison conspired with one of her sisters and conceived the idea that Rip's beauty would be greatly enhanced were his whiteness changed to blue. In a very short time Rip emerged, covered from his head to the tip of his tail with great splotches of blue.

Garrison showed during childhood that he possessed courage, as well as a sense of humor. Another incident of his childhood illustrates his courage and also another quality. He noticed once in Glover Hill a large moccasin snake behind one of his cousins. Seizing a poker, which stood beside the fireplace, he waged battle with the venomous reptile until he killed it. The child, evincing the modesty which characterized him throughout his entire life, fled into hiding when the assembled family proclaimed him a hero.

According to the recollections of his cousins, Mrs. Price and Mrs. M. S. Burdette, Garrison was not over ten years of age when he began to study music. His first instructors were Professor Orstensen and Professor Waldecker, both of Washington, the latter a teacher of some renown. As a youth Garrison was particularly fond of the waltzes of Johann Strauss, but later he became an enthusiastic admirer of Beethoven's compositions, an admiration which remained unshaken until his death. However, he once remarked that the "gloriously harmonious discords" of Wagner stirred him to his very depths.

Although when young he enjoyed the theatre, Joseph Jefferson being one of his favorite actors, in later years he obtained greater pleasure from concerts and operas.

Garrison entered the Johns Hopkins University in 1889 and received his degree of bachelor of arts in 1890. Three years later he received the degree of doctor of medicine from Georgetown University School of Medicine. In 1891 he began his service at the Library of the Surgeon General's Office, under Dr. J. S. Billings, where he became assistant and later principal assistant librarian. Garrison participated in the monumental work of the "Index Catalogue" and "Index Medicus" issued by the Army Medical Library. From 1913 to 1926 he became editor of the "Index Medicus." From 1927 to 1929 he was associate editor of the "Quarterly Cumulative Index Medicus" edited by the American Medical Association.

In 1913 he published his monumental book, "History of Medicine," which passed through four editions. His classical biography, "John Shaw Billings," was published in 1915. From 1906 to 1935 he published books, monographs and original articles dealing mainly with medical history and biography. He was mathematician and physicist and wrote several scientific articles on these subjects. He was a frequent contributor not only to medical journals but to other periodicals, such as *American Mercury, Science, Times* and *Monthly Science.*

Garrison was a teacher of teachers, an inspirer, a leader in his field and the guide of many authors, young and old. He served as a storehouse for references for authors, teachers, lecturers and editors. His advice was sought by such men as Osler, Welch and Cushing. He corrected and made important improvements in numerous books on the history of medicine published by well known authors. Many lecturers and authors acknowledged their indebtedness to him. Significant is the statement of Sir Humphry Rolleston, who wrote: "An extremely sensitive soul, he (Garrison) lived and laboured in a backwater while honours and promotions drifted by in other directions."

Garrison was a nervous, sensitive individual as a result of certain unfavorable circumstances. Library work and the compiling of bibliographies, carried on for a number of years, exhausted him and interfered to a great extent with his literary and historical work. In a letter to Dr. Charles Singer, he wrote that he had worked under difficulties, and that if he had lived in another environment and had had adequate leisure, he could have done more and better work.

Dr. Garrison was appointed a Lieutenant in the Medical Reserve Corps. In 1917 he was commissioned Major and in 1918 Lieutenant Colonel. From 1920 to 1930 he served in the Medical Corps of the regular army. While in service in the Phillipine Islands he was greatly affected, physically and mentally, by the climate and suffered there a breakdown which made him nervous and eccentric.

After retiring from the Army with the rank of Colonel, he moved to Baltimore, where he became librarian of the Welch Medical Library at the Johns Hopkins University. He declined Welch's proposal to become professor of medical history at the Institute of Medical History, but he agreed to become resident lecturer. Both positions he held until his death.

In 1917 the president of Georgetown University bestowed upon Garrison the degree of master of letters, stating: "He who superadds to the exposition of the utility and achievements of the graces of literature, richly merits to be signally recognized by his alma mater and to be decorated with the highest honors in her gift."

In 1932 Yale University conferred upon him the honorary degree of doctor of letters.

On April 26, 1910, Garrison married Miss Clara Augusta Brown of New York. The Garrisons had three doughters, Mrs. Shirley Heare, Miss Margaret and Miss Patricia. Mrs. Garrison died in 1939.

Dr. Garrison died April 18, 1935, at the age of 64 at the Johns Hopkins Hospital. He was buried in Arlington National Cemetery where his collaborators, Dr. J. S. Billings and R. Fletcher, previously had been buried.

Garrison was a many-sided man; contradictory traits made it difficult to get a clear picture of his personality. The best key to the understanding of his characteristics are his letters, for he was a brilliant correspondent. His letters deal mainly with problems of science, and art, general literature, philosophy, criticism, and medicine, with special reference to medical history; they are replete with references, aphorisms, quotations from great American and European authors and words and sentences in French, German and Latin. The letters have a biographical interest, for they present a picture of the man—his inclinations, aspirations, interest in music and literature and his attitude toward life.

(Continued in August issue.)

Correspondence

FOREIGN LETTERS

ENGLAND

The Editor
J. International College of Surgeons
Chicago, U.S.A.

Dear Sir:

Can any of your readers cite cases, from their own personal knowledge, in which fright during pregnancy has been associated with malformation in the child born subsequently? If so, what were the approximate date of conception and the actual date of birth?

(Signed) EDWARD LAWRENCE, F.R.A.I.

(Note: Answers to this letter will be forwarded at once to the inquirer.)

BELGIUM

(From Our Regular Correspondent)

May 10, 1940

Treatment of Pseudoarthrosis

Dr. Verbrugge presented before the Société Belge de Chirurgie a paper on the treatment of fractures in which, after the normal period for consolidation or several months have elapsed, no trace of callus at the site of the fracture is found upon operative examination, or in which there is clinically a total absence of consolidation, despite the seeming presence of consolidation as shown by roentgenologic examination, or a genuine "pseudoarthrosis," or, finally, a considerable loss of osseous substance.

The author is of the opinion that:

1. All cases of pseudarthrosis are curable; their treatment requires patience, good technic and perseverance.

2. The principles of treatment are the same as osteosynthesis for fresh fractures, likewise for grafts.

3. Cases of pseudarthrosis are always, so to speak, a result of faulty orthopedic or surgical treatment. They are not due to a mysterious factor, but rather to the fact that the osseous extremities are not mathematically in juxtaposition.

4. The osseous graft is doubtlessly a valuable aid in many cases of pseudarthrosis in which the bones are demineralized, but metallic osteosynthesis is the method of choice.

A very interesting discussion points out the importance of immobilization which alone can assure recovery, whether an autograft or os purum is used in the operative intervention.

Treatment of Essential Coxa Vara of Adolscents

Dr. Van Nes presented to the Société Belge d'Orthopédie an interesting communication on coxa vara of adolescents.

Under this name, or under the term of epiphyseolysis of the hip, is included an affection which manifests itself between the ages of 12 and 16 years, occurs in both girls and boys and is characterized by a displacement of the superior femoral epiphysis downward and backward in relation to the neck of the femur.

The author stated that the results of treatment of epiphyseolysis of the hip are better in proportion to the earliness with which treatment is begun; the attention of the medical practitioner should therefore be drawn to this affection. Forced redressement, formerly applied and still recommended at times by certain authors, is to be rejected in cases of progressive epiphyseolysis because of the damage produced at the articulation of the hip. Forced redressement is indicated only in cases of acute epiphyseolysis which are equivalent to fracture of the neck of the femur. In the former cases, redressement must not be followed by immobilization in a plaster cast, but by osteosynthesis with a Smith-Petersen nail. In early cases of epiphyseolysis, treatment with the Smith-Petersen nail prevents a new displacement of the epiphysis and permits patients to resume their occupations after a short time. In advanced cases good results are obtained by palliative operations (sub- or pertrochanteric osteotomies).

Stellectomy and Angina Pectoris

Docteur Jean Govaerts explained the results of stellectomy in angina pectoris, before the Société Médico-Chirurgicale of Brabant.

He first reviewed a series of 17 cases of the disease, in all of which the patients had undergone unilateral or bilateral stellectomy with simultaneous resection of two or more intrathoracic ganglions. The cases were illustrated by films, orthodiagrams and electrocardiograms of the patients, taken before and after operation. After reviewing the different theories advanced at the present time by physiologists and surgeons, cardiologists and internists, Dr. Govaerts stated that he believed that reliance could be placed on the theory which holds that the benefits of stellectomy, especially when it is accompanied by more or less extensive resection of certain intrathoracic ganglions, are due to the fact that by this operation the sensory branch, the afferent branch of the reflex, is cut off, which causes the coronary angiospasm, the originator of cardiac ischemia and subsequently of pain at the level of the heart. Dr. Govaerts was of the opinion that the operation is to be recommended in all cases in which the affection does not yield to the usual medical treatment.

Influence of Spinal Anesthesia on the Circulation of the Blood

Professor Hustin explained before the Société Belge de Chirurgie the results of his investigations on the effects of spinal anesthesia on the circulation of the blood. Some points are of practical value. Disturbances occurring within the twenty-minute period following injection of the anesthetic fluid are often accompanied by the same clinical symptoms and the same circulatory disorders which occur constantly, but to a less marked degree, as a result of decreased pressure of the cerebrospinal fluid during spinal anesthesia. Thus the disturbance or "storm" would be the consequence of an abnormal extension of the percaine towards the medulla.

Before and during the injection of the anesthetic fluid, there may ensue syncope comparable to that described by Lewis under the name of vasovagal. It is also very similar to the depressor reflex occasioned by pressure on the carotid sinus.

The position of the patient on the operating table sometimes has a marked effect on the circulation of the blood. The ventral position, especially if a cushion is interposed between the abdomen and the table, causes an acceleration of the pulse and a decided fall in blood pressure. These vascular reactions cease immediately upon placing the patient on his back.

Prolapse of Sigmoid Colostomies

Subsequent to a communication of Dr. Jonkheere, the Société Belge de Chirurgie discussed in detail the question of anatomy and of treatment of prolapse of the iliac sigmoid following the establishment of an artificial anus. There are two types of evagination. The first consists in evagination of the lower end, which is occasioned by active antiperistalsis. The length of the loop of the intestine is the determining etiologic factor. The second type consists of an evagination of the upper segment. Whatever the mechanism by which this complication occurs, strangulation of the bowel may eventuate and necessitate an emergency operation. This operation consists of first sectioning the external cylinder of the bowel at its base. One thus gains entrance to the peritoneal cavity which occupies the space between the external cylinder and the loop occupying its interior. The mesosigmoid is located. Proper hemostasis must be assured. Seizing the internal cylinder of bowel, one draws outward the entire mobilizable portion of the intra-abdominal colon. A ligature is placed on the colic end, below the section, which will cause the respective piece of the intestine to become detached. Finally, this temporarily obliterated stump is fixed to the abdominal wall by several interrupted sutures. But one must constantly bear in mind the possibility of this accident and an endeavor should be made to avoid it. This is best done by meticulous attention to technical details in the performance of the primary operation. A bridge of skin in the form of an inverted "U," with the serifs of the "U" extended laterally, used as a support for the exteriorized loop of bowel employed in the operation is an admirable aid in this connection.

(Continued from Page 280)

B.N.A. (English translation) terminology. This does much to aid the confused student. The book should be of distinct value, not only to the student, but to the surgeon and general practitioner.

P.

The New International Clinics. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia. Volumes II, III and IV, New Series Two. Price $3 per volume for current year; $5 for back years. Philadelphia: J. B. Lippincott Company, 1939.

EACH of these volumes consists of original articles by well known leaders in the respective fields and is thus a compendium of clinics and evaluated reviews of current advances in the medical arts, with case histories, diagnostic workups and treatment. Worthy of note are the articles on the use of suprarenal concentrate by mouth in the treatment of bronchial asthma, urticaria, herpes zoster and dermatitis venenata; vaccinotherapy in chronic and focal infections; the neurologic and psychiatric aspects of vitamins; the treatment of diabetes during the course of infections and surgical complications; the treatment of neutropenia by splenectomy; the ease of obtaining placental blood for transfusions; allergic reactions to liver extract injections and their relief with adrenalin injections; intractable pulmonary hemorrhage; massive hemorrhage from peptic ulcer; and angina pectoris. The volumes have the advantage of being based on the authors' experience as well as on the current literature.

R.

A Mirror for Surgeons. By Sir D'Arcy Power, K.B.E., F.R.C.S. Consulting Surgeon to St. Bartholomew's Hospital, London. Price, $2. Pp. 230. Boston: Little, Brown & Company, 1939.

FOR more than half a century Sir D'Arcy Power has maintained the high standard of teaching and practice of surgery in the oldest British hospital. Early in life he realized the value of a thorough knowledge of the history of surgery as attested by the editing in 1886 of "Memorials of the Craft of Surgery in England" from materials compiled and left by John F. South. As dean of the British surgical profession he has contributed many biographies of surgeons to the "Dictionary of National Biography."

For the present volume Sir D'Arcy made excerpts from the writings of twenty-two surgeons, from John Arderne (1307-1380) to Sir William Macewen (1848-1924), during which time surgery advanced from an art to an exact science.

John Arderne's treatment for stone impaction in the urethra was as follows: "A stone impacted in the urethra causeth the patient to suffer right great pain and intolerable sorrow. It may be pushed back into the bladder by an instrument of silver or latten such as may be made in very good town by craftsman that maketh pins for women's heads or at the goldsmith's. Many a one have I so holpen. I have seen young men and old in the which the stones have been so great that they could neither come out by the eye of the yard nor be pushed back but always abideth in the middle of the yard. And I cured them easily and quickly in this manner. First, I took the patient and laid him grovelling and then I bound the yard on both sides of the stone with linen bands, so that the stone might nowhere flee away, and with a little incision upon the stone with a lancet or with a razor I had out the stone and after that I sewed the outer skin over the hole with a needle and thread and then I laid on a dressing of white of egg mixed with finely ground wheaten flour and left it for three days, and within fifteen days I had him perfectly cored."

In Chapter LI is found the important contribution of Thomas Gale (1507-1587) in developing three types of slender needles. Gale is best known for his "Textbook on Surgery" (1563-1566).

Space does not permit a discussion of the contributions of the following: Ambrose Paré (1510-1590); John Halle (1529-1568), "a hater of quacks"; William Clowes (1544-1603); Peter Lowe (1550-1610), the founder of Glasgow University; John Woodall (1570-1643) who, as surgeon general of the East India Company, was the link by which the great tradition of Elizabethan surgery was transmitted to the surgeons of the Commonwealth and the Restoration; and Richard Wiseman (1622-1676), who "occupied a definite position in English surgery. He wrote for cultivated Surgeons and was among the first to illustrate his remarks with accounts of cases which had been under his care."

Others worthy of mention are William Cheselden (1688-1752), a versatile surgeon, who first adopted suprapubic lithotomy; Percival Pott (1714-1789), a master teacher of surgery; John Hunter (1728-1793), the experimental surgeon; Abraham Calles (1773-1843); Sir Charles Bell (1774-1842), surgeon and artist; John Collins Warren (1778-1856); Sir Benjamin Collins Brodie (1783-1862), who was a great gentleman at a time when few surgeons were gentlemen; Sir James Paget (1819-1899), who first taught the profession that pathology is the science of surgery; Joseph, Lord Lister (1827-1912); Sir Jona-

than Hutchinson (1828-1913); Sir William Macewen (1848-1924), a pioneer in surgery; William Stewart Halsted (1852-1922); Henry Jacob Bigelow (1818-1890); and James Marion Sims (1813-1883).

This is not only a "must" book for surgeons but a "source" book for all students interested in the history of mankind. W. J. CARSON

Illustrations of Regional Anatomy. By E. B. Jamieson, M.D. In seven sections. Second edition. Price, $15 for complete set, $1.50 to $3.50 for individual sections. Pp. 305. Sections I to V, inclusive: Edinburgh: E. & S. Livingstone, 1937. Sections VI and VII: Baltimore: Williams & Wilkins Co., 1939.

IT is impossible to criticize these perfect drawings of Jamieson. It is a pity, however, that a text does not accompany them. Another man's description may not wholly agree with the drawings as presented. For example, Jamieson evidently disagrees with the statement that the pretracheal layer of fascia is an offshoot of the ensheathing layer. Plate 49 under "Head and Neck" shows no communication between the two. We should like to know his version in words as well as pictures. Hence if lectures accompanied these drawings, an anatomic Utopia would be to have them bound together. Many of these loose-leaf plates are in several colors. Their small size (6-1/2 x 8-1/4 inches) enhances their value for use in the laboratory and lecture room. P.

Principles of Human Anatomy, with Synopses and Bibliography. By Charles F. DeGaris, M.D., A.M., Ph.D., Professor of Anatomy, University of Oklahoma School of Medicine, Oklahoma City; Ernst Lachmann, M.D., Assistant Professor of Anatomy, University of Oklahoma School of Medicine; and Ralph E. Case, B.S., A.M., Instructor in Anatomy, University of Oklahoma School of Medicine. Price, $2.50. Pp. 239. Philadelphia: Lea & Febiger, 1939.

THE book is devoted to various plans of presenting gross anatomy as a course of instruction. Plan I is one in which four students are assigned to a cadaver during one semester's work. According to Plan II, two cadavers are assigned to four students during two semesters' work. Plan III provides that one cadaver be assigned to four students during two semesters. These plans are discussed pro and con.

The title, *Principles of Human Anatomy,* is somewhat misleading. This reviewer believes that the book is more of a guide to dissection rather than a discussion of anatomic "principles." Texts which ask questions and fail to answer them in the following sentence work hardships on the reader. This reviewer believes that if authors wish to stress a clinical point, they might well make a simple statement. On page 37 the hypothetical case of an incarcerated *direct* inguinal hernia is discussed. One wonders why such a rare entity is chosen rather than the citation of a classical example, such as that of incarcerated indirect inguinal hernia. On page 48 the student is referred to various text figures for the disposition of the layers of the cervical fascia. Different texts differ on this point.

References to various articles in the journals are to be highly commended, especially since these references are further incorporated in the paragraphs of the subjects discussed. The general text shows careful planning of dissections and is well done. The bibliography is cleverly arranged under the heading of the various systems as well as general references, nomenclature, history, anatomy and x-ray anatomy. P.

Surgical Applied Anatomy. By Sir Frederick Treves, *Bart.* Revised by Lambert Rogers, M.Sc., F.R.C.S., F.A.C.S. Tenth edition. Price, $4.50. Pp. 748, with 192 illustrations, 66 in color. Philadelphia: Lea & Febiger, 1939.

THIS is the tenth edition of a work which originally was published in 1883 and was revised from the ninth edition which was prepared by the late Professor C. C. Choyce. Extensive revisions have kept the book abreast of the times. Included, for instance, are bronchoscopy and the use of lipiodol in visualizing the tracheobronchial tree.

Certain omissions, however, are to be noted. On page 210 Figure 59 shows the arrangement of the cervical fascia. It is well depicted but it might meet with disagreement in that it shows the prethyroid muscles as having no fascia of their own. In the diagram they lie between the ensheathing and pretracheal layers. Figure 63, page 227, depicts the thyroid gland as having no fascial pedicle. This reviewer believes this structure to be surgically important. On page 270 the delto-pectoral groove is discussed and only four lines are devoted to it. Since this is one of the most important surgical landmarks, and since an attempt should always be made to isolate and preserve the cephalic vein, more stress might well have been placed upon this structure.

On page 290, line 11, the phrase "behind the clavicle" is used. This evidently is an error, since only divisions of the brachial plexus are behind the clavicle. No doubt "behind the pectoralis minor" was meant. The muscles of the

forearm might be described more fully; Figures 83 and 84 are not sufficient. The use of color would clarify the structures shown in Figure 87. This diagram is good as it stands, but it is somewhat confusing. Finally, more emphasis might have been laid on intraperitoneal rupture of the bladder.

P. T.

The Rectum and Colon. By E. Parker Hayden, M.D., F.A.C.S., Assistant in Surgery, Harvard Medical School, Boston; Assistant Surgeon and Chief of Rectal Clinic, Massachusetts General Hospital, Boston. Price, $5.50. Pp. 434, with 169 engravings. Philadelphia: Lea & Febiger, 1939.

THIS work might well have been entitled "Surgery of the Rectum and Colon" because it is largely surgical in nature. In general excellent judgment has been used in the selection of material and the amount of space devoted to each topic, although 50 pages are hardly sufficient for the discussion of carcinoma of the bowel, and one could wish for a more complete description of the mechanism of the external sphincter and its relationship. The apparent dogmatism of the work is merely the result of condensation. The chapter on diarrhea and idiopathic ulcerative colitis is especially good. The author points out the fact that many cases of diarrhea due to faulty nervous mechanism are loosely and incorrectly designated as "colitis." He apparently fails to recognize, however, the significance of the emotional background in patients with true ulcerative colitis. In benign conditions he presents acceptable palliative treatment. Ample illustration of technics presented is provided. Chapters are included on rectal prolapse (in both children and adults), venereal lymphopathy, tuberculosis and actinomycosis, diverticulosis and diverticulitis, multiple polyposis, melanosis, megacolon and volvulus, and injuries and foreign bodies.

C.

Archiva ed atti della Società Italiana di Chirurgia. Edited by Dott. Pietro Valdoni. Società Italiana de Chirurgia, Rome, 1938.

THIS volume, printed and bound with excellent taste and ably edited, presents the reader an exceptionally complete treatise on important surgical subjects, and in addition it includes several outstanding papers on topics of current interest in clinical surgery.

At the Forty-fifth Congress of the Italian Society of Surgery the themes assigned for complete review were: (1) pulmonary suppurations and gangrene, (2) acute and chronic osteomyelitis, (3) associated syndromes of the upper abdomen. Professor Paolucci has enriched the surgical literature of the world with his exposition of the best knowledge of the day on the ever expanding field of thoracic surgery. This encyclopedic review of all the clinical aspects of the subject is further enhanced by a concise presentation of the author's own clinical experience, from which conclusions are drawn as a result of solid logical thinking. When these are considered, along with the original technics described, Paolucci stands out as one of the great masters of modern surgery.

An attempt will be made to review briefly the salient features of this remarkable presentation.

One feels compelled, before considering anything else, to express admiration for an attractive style that has all but diappeared from medical literature. The cold noncommittal recital in bibliographic style of the controversial side of a subject, the stilted presentation of factual data without an attempt to criticize and synthesize them, methods which leave the reader perplexed and often in doubt as to the opinions of the essayist, are here replaced by a living, palpitating personal analyisis of every bit of knowledge based on personal experience intensively lived, discriminatingly adapted to each patient and therefore of inestimable teaching value.

The criteria of judging operability are well presented. The author warns against accepting clinical improvement as the sole guide in medical treatment and illustrates the necessity of frequent radiographic examinations for determining the type of operative procedures indicated. In order to evaluate correctly Paolucci's fundamental teachings in this field, the reader should bear in mind that this presentation does not cover tuberculous processes. Outstanding are his conclusions on pneumothorax in these conditions. With an intelligent review of the experiences and opinions of leading authorities in the field of thoracic surgery, the essayist shows clearly the dangers of this procedure, i.e., the faculty with which it can cause the development in a favorable case of the dangerous and rapidly fatal complication of rupture of the abscess in the free pleura, followed by extension of the suppurative process; he concludes by declaring that critical experience has placed a tombstone on this procedure that unfortunately is still uncritically employed here and there in the treatment of pulmonary suppuration and abscess. The author then gives very clear points for differential diagnosis and radiographic interpretation. The various technics of extrapleural "plumbage" are lucidly discussed. The author makes a good case for his method of "plumbage," whereby he uses gauze and occasionally iodoform gauze instead of the various paraffin pastes. When perfect adhesion of the parietal

to the visceral pleura is obtained, the abscess cavity is entered. Clear details for this procedure and for after treatment are given. The use of gauze, impregnated with barium sulfate, is recommended, since this material makes an excellent opaque packing for abscess cavities. Noteworthy also is the use of short wave diathermy in promoting absorption of infiltrations after healing of abscess cavities has taken place. Paolucci's technic embodies the experience of the best thoracic surgeons, to which he has added the contribution of his brilliant ideas. His method of suturing the lobectomy stump is a contribution in itself to the progress of this difficult branch of surgery.

Branoati's presentation of osteomyelitis is another gem and another proof of the value of assigning a subject to a master to have it brought up to date. There is hardly anything worth while in our knowledge of this dreaded disease which has not been concisely and critically reviewed in this monograph. The essayist has not failed to review also the knowledge of the ancients and has shown how accurate were many of their observations.

Stropeni has presented an excellent review of associated syndromes of the digestive tract. Space does not permit a résumé of the other contributions.

This volume of the Italian Society of Surgery will be a milestone in the history of surgical progress.

VINCENT A. LAPENTA

Traitement médico-chirurgical des pleurésies purulentes tuberculeuses. By A. Bernou, H. Fruchaud and H. D'Hour. Paris: G. Doin & Co.

IN their preface to this excellent work, the authors point out that the frequency with which purulent pleurisy follows artificial pneumothorax induced them to turn their attention to this complication. Different authors estimate that it occurs in 10 or 20 per cent of the cases observed, or even more frequently.

An account is first given of the way in which the complication occurs. Perforation may result from trauma, may be spontaneous or may follow infection from without. Phophylaxis of this dangerous complication is therefore allotted the space it deserves.

Suppuration of artificial pneumothorax is treated from the clinical point of view, topography playing a special part.

In the matter of treatment, surgical methods predominate, and they are excellently described by the Professor of Surgery in the Medical Faculty at Angers. The anatomic and topographic approach to the collections of pus is set forth in detail, and a long chapter is devoted to surgical technic. Anterior, paravertebral and axillary thoracoplasty are described, with excellent illustrations. All postoperative dangers such as hemorrhage, infection, etc. receive attention.

Further sections deal with more conservative methods, such as ordinary and reinforced aspiration. Pleurotomy and thoracotomy, too, are carefully described.

Indications for surgical interference are carefully defined and described in relation to the kind and site of infection present. The final chapters contain the results of the authors' experience and end with the treatment of deformities of the thorax which occur in this condition.

F. M.

The Surgery of Pain. By René Leriche, M.D., Lyon; LL.D., Glasgow; F.R.C.S. Eng. (Hon. Causa), etc. Professor of Clinical Surgery, University of Strasbourg. Translated and edited by Archibald Young, B.Sc., M.D., F.R.F.P.S.G., F.A.C.S. (Hon.); Regius Professor of Surgery, University of Glasgow. Price, $6.50. Pp. 512. Baltimore: Williams & Wilkins Company, 1939.

THE author states that the primary theme which he has been anxious to develop is that the surgeon should listen to his patients' complaints, however tedious their stories may be, and that he should not too readily conclude that the sufferer is exaggerating.

In developing this theme, the author builds up, in a persuasive manner, a new physiology which is at the same time more practical. Many practical suggestions for the relief of intractable pain are made, and although the physician may not agree with the physiologic interpretation set forth by the author, he will find that these suggestions have practical value.

The author, a pioneer in the field of surgery of the sympathetic nervous system, makes no didactic claims. He "studies nature, not books." Except for two chapters on symptomatology and treatment of trigeminal neuralgia, the book deals entirely with the sympathetic nervous system as a factor in the production of pain. Such conditions as painful amputation stumps, juvenile arteritis (thromboarteritis obliterans), causalgia, Raynaud's disease, angina pectoris and various nerve injuries are thoroughly evaluated. The final chapter is entitled, "What is Pain?"

The nineteen chapters comprise the lectures delivered in connection with the Chair of Medicine, Collège de France, Paris, on the invitation of the late Prof. Charles Nicolle, who died in 1936, director at one time of the Pasteur Institute at Tunis and at a later date professor of Medicine at the Collège de France. The volume

can be warmly recommended to the progressive man in medicine.

A. T.

The Art of Anesthesia. By Paluel J. Flagg, M.D. Sixth edition. Price, $6. Pp. 491, with 161 illustrations. Philadelphia: J. B. Lippincott Company, 1939.

AS the title indicates, this volume deals with the art of anesthesia, principally inhalation anesthesia. Nitrous oxide, ethylene and ether are well covered. In the chapter, "Selection of Anesthetic," nitrous oxide and oxygen, or ethylene and oxygen, or nitrous oxide, oxygen and ether, or ether alone are the only anesthetics considered. The importance of resuscitation and prevention of asphyxial death are strongly emphasized as is also the intratracheal technic. The author presents his own technics well and for those who use those technics, the book will be appreciated.

CHAS. J. BETLACH

The Medical Career. By Harvey Cushing, M.D. Price, $2.50. Pp. 303. Boston: Little, Brown & Company, 1940.

THIS collection of essays and biographical appreciation was selected and edited for publication prior to the author's death on October 7, 1939. To appreciate the work to its fullest extent it is necessary to consider Professor Cushing's early education. He was trained in general surgery by Dr. Halsted from 1896 to 1912, during which time he was in constant touch with Welch, Howell and Hurd. He studied under Theodore Kocher and Hugo Kronecker (Bern) and Charles S. Sherrington (Liverpool) in 1900 and 1901.

His first scientific papers were rewarded by his election to membership in the American Association of Pathology and Bacteriology, 1900; American Neurological Association, 1903; American Physiological Society, 1905; charter membership in the American Society of Clinical Surgery, 1903; and fellowship in the American Surgical Association, 1906.

Although he created a school of neurological surgery, his study of each case was that of a general surgeon.

In the "Medical Career" address given at Dartmouth College on November 20, 1928, he said in part: "The ideals and standards of the profession having been the same these past two thousand years or more, the difficulties of living up to them are, it may be assumed, no greater now than they ever have been. Medicine, in short, becomes constantly more exact and scientific in its procedures. It is prompt to adopt for its own use new knowledge of most varied kinds that comes from the chemist, the physicist, and the biologist, whose primary motive is the extension of knowledge, and who have little if any interest in the application of their discoveries by the medical profession. Röntgen could hardly have dreamed that his discovery would revolutionize our methods of diagnosis, the Curies that radium would be an effective agent in combating certain kinds of malignant tumors, or Faraday that his alternating current would some day be utilized in place of the scalpel to make dissection a relatively bloodless procedure. Anatomy today has become a science which delves into the finest microscopic structures of the tissues and their development from the ovum through the embryo. So, too, the scientific study of function as something apart from structure engages the attention of physiologists in many diverging lines of work that call for chemical and mathematical and biophysical knowledge. Biochemistry of the living tissue and secretions of the body in health and disease engage other groups of medical scientists."

It is a legend that the most critical audiences a scientist can address are the American Philosophical Society, the History of Science Society and the American Interprofessional Institute.

"The Humanizing of Science" was presented as the presidential address before the History of Science Society, Washington, December 28, 1934, an excerpt from which follows:

"The chief difference between modern science and the natural philosophy of the ancients is said to lie in our greater inclination to put things to the test of experiment and, while medicine is constantly broadening its scientific background, in a certain sense every drug a doctor administers and every operation a surgeon performs is experimental in that the result can never be mathematically calculated, the doctor's judgment and the patient's response to these prescriptions being variables indeterminable by any law of averages.

"The humanizing of Science may mean one of two things: (1) a revival of interest in the early classics that deal with natural philosophy, and (2) such an enlargement of the scientific outlook as to include in its scope matters which have to do with human welfare as something apart from culture and which are in the long run perhaps more important."

"The Binding Influence of a Library on a Subdividing Profession. Address at the Dedication of the Welch Medical Library of the Johns Hopkins University" was given October 17, 1929, from which we read: